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The Budget and Education [1]

FOR the sixth year in succession it is possible for us who are concerned with, and have a considerable stake in, the education of this Presidency to consider the provision which Government have made for it in the financial year on which we have entered. To begin with we may look at

I. The Provision under 31, Education.

The amount which the Government have set apart under this head for 1928-29 is Rs 2,43,06,600, an increase of more than 25 lakhs over the estimate of last year, and of almost forty-five lakhs above that of two years ago. The Ministry therefore cannot be accused of failing to regard education as a living and growing power. We are confirmed in this position when we find that in the whole Budget there are only three other items for which the provision that is made approaches in any degree to that which is made for education. For the General Administration of the Presidency a sum of just over two and a half crores is set aside; for Jails, Convict Settlements, and Police taken together a sum of Rs 2,28,00,000; and for Civil Works a sum of Rs 2,18,00,000. The value of education is thus fully recognized by the position which it occupies financially in the Budget. Only the civil administration of the Presidency is suffered to cost more. Further, more than half the Budget allotment is devoted to elementary education. And still further, while last year saw thirteen per cent of the whole Budget assigned to education, the percentage this year is fourteen. On general grounds there is a recognition of growth, and of growth along lines that are conducive to the upbuildings of a nation's most precious asset—its youth. We heartily welcome this feature in the Budget. And we are now in a position to consider

II. The Total Amount spent on Education.

What is given under head No. 31 of the Budget is the main part of the proposed expenditure on Education, but it is by no means the whole. For instance

[1] An address delivered at the Kodaikanal Missionary Educational Conference, May 18th 1928.

under other headings there is provision of almost twenty-seven lakhs for Reformatory and Certified Schools. Medical Schools and Colleges absorb practically twelve lakhs ; and Industrial Schools two lakhs. The Commissioner of Labour has almost ten lakhs put at his disposal for the educational betterment of the Depressed Classes, while the reclamation of the Kallars, in which over six hundred teachers are employed, requires the greater part of three and a quarter lakhs. Then we must remember the Veterinary College, and the Agricultural College and schools, and, in the Budget, that means practically two and a half lakhs. Further, if education is to be imparted it must be tested, and in our present condition of frailty that means examinations, the provision for which is two and a half lakhs; while so long as education continues we are unable to imitate Bolpur but must have buildings for it, and the P.W.D. requires more than seven and a quarter lakhs for this. And so it goes on, with the result that when we have added one item to another we find that the amount which it is intended to take from the public purse for the maintenance of education in this Presidency during 1928–29 is not less than four and a half crores. In round figures that is £ 3,400,000 or $ 17,000,000. It is a good total in itself and all the better because it is not a stationary figure. But there is room, if not a crying need, for a much more generous provision. Let me mention only two figures. The Civil Service Estimates for Education in England and Scotland were published a few weeks ago. The population of this Presidency is over forty-two millions. That of England is not forty millions, and it is proposed to spend on education in England a sum of forty-three million pounds. Scotland has a population of five millions, or say roughly that of North Arcot, South Arcot, and Chittoor combined, and it has assigned for its education during the current year out of public funds over six million pounds or almost double of what this Presidency, with its twenty-six districts and the Agency in addition, intends to spend on the education of its youth. There is still room for advance, then. So far, we have seen that the amount which is to come out of public funds for education is most decidedly on the increase, and that it compares very favourably with the other expenditures which are included in the Budget of Madras. Another gratifying feature presents itself when we turn to

III. University Education.

There are two universities in this Presidency, and we may well believe that from a financial point of view they have both healthy appetites. Yet there is little sign of their voracity in the Budget. The amount allotted to them is only Rs 6,11,000, or Rs 1,22,600, more than was given to them last year. So far then those who advocate, and rightly advocate, expenditure on the education of the masses can find nothing in the Budget to support the position that primary education is being starved to enable the universities to thrive lustily. The member of the family who is getting more than a crore and thirty lakhs can hardly have any grudging words to say to the member who has to be content with six lakhs.

The Andhra University will undoubtedly claim and receive more as it grows in strength. At present it is in the position of not a few people, it is engaged in

house-hunting. We shall all be glad when it has a settled home of its own. addition to wishing for a habitation, it is also wishing to become the manager of certain of its colleges as well as continuing to be the controller of them all. Evidently it has not realized the perils to which it would be exposed if that wish were granted.

The University of Madras has been generously treated by the Government; and I must say that the University has made the very best use of the money thus received. Any one who reads the Report of the University that was passed at the March meeting of the Senate cannot fail to be struck with the rapid advance which the university is making towards the goal of a teaching university. Facilities for research are being provided with most encouraging rapidity, and more especially in matters and subjects connected with South India. The university is a real centre of learning.

There is one obstacle in the way of the development of the University to which attention must be given with all seriousness and without delay. The obstacle to which I refer is the affiliating functions which the university has to discharge. These are becoming a heavy burden, and, if the burden is not in great part removed within a very short time, two undesirable results will follow. On the one hand the University will be hindered in its endeavour to become a truly teaching and residential university; and on the other hand it will become less and less able to be of help to the large body of affiliated colleges. The continuance of affiliating functions is steadily weakening the university, though it is making a valiant effort to counteract this quiet undermining. A day of brightness for higher education in this Presidency will dawn when the affiliated colleges arise and claim independent life for themselves through the medium of one or more universities. A lead is being given by Sri Minakshi College in Chidambaram which, through private generosity, is to be transformed into a university. It is hard to believe that such action will be solitary; and indeed a recent announcement in the press indicates that it is not so. Meantime we await with interest the pronouncement of Government on the report of the committee appointed to consider the question of establishing a university for the Tamil districts.

Up to this point we have been occupied with features of the Budget that which bring satisfaction to those who peruse it. Less re-assuring aspects present themselves when we direct our attention to

IV. Collegiate Education.

As our concern is with the general education of the Presidency, we make no reference under this head to professional colleges. With this limitation in mind we note that there are only two lines of figures in the Budget with which we have to deal. They are these:

Government Arts Colleges	Rs 11,24,500
Grants to non-Government Arts Colleges	3,65,100

(1) Now any one looking at these two lines would conclude, not unnaturally, that by far and away the greater amount of collegiate work in the Presidency was

done by colleges managed by Government. Imagine the astonishment of such a one when he is told that there are 44 Arts colleges in the Presidency, and that only ten of these are under State management; that 12,258 students attend the Arts colleges of the Presidency, and that of these only 2934 are members of Government colleges. He would almost inevitably ask: Does the Ministry really know when it frames its budget, and do the legislators know when they pass the budget, that less than a quarter of those attending Arts colleges are students of Government colleges, while more than three-quarters are students of non-Government colleges?

(2) Now, if it be pointed out to such a questioner, as in all honesty it must be, that the attention of the Ministry has been drawn to this fact again and again, he will probably say: Then surely Government are taking steps to set right this grievous inequality? And again the answer is bound to be a surprise to him. For we have only to direct his attention to last year's budget, and he will rub his eyes as he looks at the figures. For what he will find is this: that the amount allotted to Government colleges in 1928–29 exceeds that allotted to them in 1927–28 by more than Rs 1,35,000, while the amount allotted to non-Government colleges is less by Rs 1,19,000.

(3) But surely, our surprised questioner will continue, there must be some redeeming feature. And again candour, compels us to admit that there are one or two features which have not so far been mentioned, but they can hardly be characterized as redeeming. What are they? In the first place, the allotment of eleven and a quarter lakhs to Government colleges is not all. There must be included what is given under the heading of Civil Works, that is the amount spent on Government college buildings. The figure for this we find to be Rs 2,57,300. Then in the next place, we must note a supplementary grant that was made before the Budget session ended; the amount of this was Rs 1,00,200. Thus what is to be expended on Government colleges under the present budget estimates during 1928–29 is really Rs 14,82,000. To maintain ten Government colleges in which less than 3000 students are being educated the Ministry assigns almost fifteen lakhs. For the maintenance of thirty-four non-Government colleges with over 9000 students the Ministry provides just over three and a half lakhs. Is the Ministry prepared to rectify this glaring anomaly?

At the first glance things do not look so bad when we turn to

V. Secondary Education.

The figures relating to it in the Budget are:

Government Secondary Schools	Rs	2,49,200
Direct Grants to non-Government Secondary Schools		11,63,600
Grants to Local Bodies for Secondary Education		9,00,800

(1) At first glance, I have said, things look less discouraging here. For if, compared with last year, Government schools receive an addition of Rs 5000, the amount received by non-Government, that is, aided schools is Rs 59,000 in advance of that assigned last year, and the amount to the schools of local bodies is an advance of Rs 42,400. Both these seem steps in the right direction. So far, good.

(2) But now our persistent questioner begins to raise his voice. He says that he wishes to know something about the number of schools under the different managements and the number of pupils attending them. His wish may be speedily gratified. Government manages 34 secondary schools, and these are attended by 8084 pupils : local and municipal bodies are the managers of 234 secondary schools with 55,503 pupils ; while there are 324 schools under private management and these are attended by 1,12,557 boys and girls. In other words the number of pupils in secondary schools under private management is more than double the number in schools under board management, and fourteen times the number in schools under government management. Our questioner at once acknowledges that a scrutiny of the budget figures would never have led him even to suspect that the distribution of schools and pupils was as the facts disclose. Is it wonderful if he asks : Can such disproportion be for the benefit of education ?

(3) There is another question which he propounds to us. I thought, he says, that secondary education was recognized as the appropriate field of private effort. Yes, we have to reply. So it has been recognized in official educational pronouncements, and not so long ago in a statement of the Government of Madras itself. In that case, he replies, I hope you will not think me rather hyper-critical. I quite admit that an addition of Rs 5000 to the amount allotted to Government secondary schools over the amount allotted last year is very small. But when, according to accepted line of action there should really be withdrawal of official effort and so reduction in official allotment, an enhancement however small seems out of place. You are quite right, we are bound to admit ; the trouble is that if there is any policy, it does not find expression in the figures of the Budget.

(4) Our questioner is not done with us yet. He evidently feels that our last answer was rather feeble, and I am not surprised. It has not satisfied him, and his appetite for information has been whetted. Take the Government secondary schools, he says. The provision for them in the budget is in round figures two and a half lakhs. Then to this has to be added Rs 1,15,500 for buildings to be found in the Civil Works part of the Budget. So that altogether it costs the public three lakhs and sixty thousand rupees to educate eight thousand pupils in schools maintained by Government. Now, according to the Budget, if these eight thousand boys and girls were being educated in Board and Municipal schools the cost to public funds would be one lakh and thirty thousand ; while if they were in schools under private management the tax payer would have to give no more than eighty-three thousand rupees. Is there any ground which can be urged in the name of fairness for this remarkable discrepancy, asks our questioner. To educate eight thousand pupils in schools under one form of management costs public funds more than three and a half lakhs, to educate the same number in schools under another type of management costs public funds one lakh and a third, while to educate them under a third type costs public funds under eighty-five thousand rupees. And our inquisitor now showers his questions on us like hailstones. Has this sort of thing gone on for any length of time ? Do people really understand what is taking place ? Is this the way to advance education ? Is the Ministry satisfied with this

use of the public funds with which they are entrusted? Our questioner has us at his mercy. What can we do but hold up our hands and shout, Kamerad?

We turn from this unsatisfactory region of secondary education, and direct our attention to

VI. Elementary Education.

Here there are figures which let in a ray of light on our somewhat darkened outlook. They are as follows:

Government Primary Schools	... Rs	1,300
Direct Grants to non-Government Primary Schools	..	67,300
Grants to Local Bodies for Primary Education ...	...	1,29,09,700

(1) When we look at the first of these items we no longer throw up our hands, on the contrary we face our persistent questioner with no little boldness. Do you notice, we say, that Government has a policy here and is sticking to it? Last year the amount given to Government primary schools was Rs 5,000, this year it is only Rs 1,300. At this rate there will soon be a complete blank under this head in the Budget. The Government are most heartily to be congratulated. But we notice that our questioner does not give us the support which we expected from him in moving this vote of thanks. What is wrong with you? we ask. Well, he says, how is it that the Director of Public Instruction in his last report says not only that there are a number of Government primary schools but that their number has increased by over a thousand? And then we remember that if the schools under the Education Department are being eliminated those under other Government departments are being increased. It looks very much like a case of the front door being tightly closed, but the back door being kept open all the time. We shall have to think again before we move that vote of thanks.

(2) The second item is a grant of Rs 67,300 to boarding schools for Indian orphans. The vote of thanks is carried here without dissentient.

(3) The third line represents three separate grants. We shall take them one by one. And first, there is a grant of Rs 1,82,100 to Village Panchayets. We noticed last year that this is a new agency of control. This year the grant which it receives is almost double of that which it then received. Some 500 schools are now conducted by it. Some information is certainly required before we can pass any opinion on the value of this departure. The expenditure seems to be somewhat similar to that of Local Bodies on their schools.

(4) The second constituent of the third line is a subsidy of Rs 72,63,200 to Local Bodies for the maintenance of the primary schools which they manage. There are 15,480 of these, and they are attended by 903,893 boys and girls. The amount is an increase of Rs 7,85,000 upon that of last year.

(5) The third constituent is a grant of Rs 53,12,900 to District Educational Councils for the aided schools under their supervision. Now there are 32,563 primary schools under private management, and they are attended by 1,241,597 pupils. We gratefully acknowledge that the grant is an increase of Rs 9,81,700 on the amount which was allocated to District Educational Councils last year. We

also notice with gratitude that the allocation of last year as given in the Budget was in the course of the year enhanced by some eight lakhs. In this way the Ministry made amends for the wholly inadequate grant to aided primary schools which was inserted in the Budget. The alteration was the result of the representations which were made to Government, representations which received the support of the press. For a continuance of this attitude of Government we are most grateful. It goes a long way to remove a patent anomaly.

(6) The anomaly, however, is not wholly removed, says our persistent questioner. And we have to admit that he is right. The figures show that, in round figures, for every two children who attend a Board School there are three who attend a school under private management. Yet the Boards receive an allotment of nineteen and a half lakhs more than the private managers. Can any principle of equity be urged in favour of the position which this distribution of public funds declares, namely that the more an agency does for the spread of primary education the less financial support will it receive from the State? This is the very way to hinder the advance of elementary education; but it is the way which is persisted in year after year. Is nothing to be done to put it right? If legislation is needed, as is sometimes asserted, surely it is not beyond the wit of the Ministry to devise and carry through such legislation. Even proposed legislation, so far as I have seen it, holds out no hope of this most serious obstacle in the way of elementary education being removed. And until that is done a heavy responsibility lies at the door of the Ministry of Education.

There is one other matter which we must consider before we sum up the impression which the Budget leaves upon us and that is

VII. The Inspection of Education.

The allotment for this highly important service is Rs 16,62,700, and, without fear of contradiction, I may say at once that this sum is wholly inadequate. It provides for an inspecting staff of 433 members. Now that is practically what the size of the inspectorate was prior to the reorganization in 1922. In that year changes were made so as to secure a more satisfactory cadre, and at the same time a large reduction was made in the number of those carrying on the work of inspection. I drew attention to this in connexion with the 1923-24 budget; and while all heartily supported every effort that was made to improve the quality of the inspectorate, no one could look but with dismay at the work which was being placed on the shoulders of the diminished staff. Now, after five years we are to have an inspectorate which shows no diminution on that which was in existence in 1922. And in the course of these five years, the Director's Report tells us, there has been an increase of practically seven thousand schools. What is the result? There is an inspecting staff of 440 several of whom at any one time may be expected to be on leave. And there are over 50,000 schools of general education in the presidency. So that we may say that in the course of a year there are 400 men and women to carry on the inspection of 50,000 schools. The thing cannot be done. Remember where many of these schools

are placed; remember climatic conditions; remember the incidence of holidays. How is it possible to visit these fifty thousand schools in the course of a year? And if railway and bus have made visiting possible, what manner of inspection can be carried on in these conditions? What real acquaintance with the work of each school? What help and encouragement rendered to the teachers? What guidance to managers? All honour to the inspectors for what they do. And when we are inclined to grumble over their report or to comment with some force on the suggestions made, let us not forget that to them has been assigned the impossible. The task which is theirs is beyond the powers of the best. But while we may be able to cultivate this attitude, I do not think that we shall be able to keep back our persistent questioner from saying: And what about the bearing of all this on the education of the youth of the presidency?

We have now gone over several features of the Budget so far as it concerns education in South India during the current financial year. We have said nothing about professional institutions, nor of special schools, nor of what is called European education. These are of the highest moment and raise many problems; but they require separate treatment. We must confine ourselves to what the Budget provides for general education. And when we do that as we have sought to do, we are led to

VIII. Certain Conclusions.

These may be summed up in one caption which is written over all these pages of figures in the educational portion of the Budget, and that caption is: WANTED A POLICY.

i. Before we can have any stable policy in education we must know clearly what is *the relation between the Ministry of Education and the Department of Education.* Are they parallel and largely independent? or are they co-operative in their activities? Those of us who come from other countries know what the relation of the Education Minister is to the Board of Education. The Minister has no assured permanency; the Board has. The Minister is in office when his political party puts him there; the members of the Board bear office because of capacity for educational administration. The Minister initiates legislation in the appropriate chamber, but he does it after full consultation with the appropriate officials of the Board. That is a reasonable procedure, and seems to be the only one which can secure satisfactory legislation in regard to education. If such a procedure is followed here, we may expect the best of results. But if it is not, what is to prevent education from becoming the handmaid of politics? We must press therefore for a clear pronouncement on the relation between the Ministry and the Department of Education.

ii. But if this is to be done we must also have a clear idea of *the function of the Education Department.* Here if anywhere a real policy has to be inaugurated.

(a) At present *the Department controls certain parts of education but not the whole system.* Let me quote from the last Report of the Director of Public Instruction.

The problem of the control of elementary education is complicated by the fact that in addition to the schools under the Director of Public Instruction there are schools under the Labour Department, the Jail Department, the Fisheries Department, the Police Department, the Forest Department and under the Registrar General of Panchayats.

This is not control, it is chaos. By it the spending of money is increased, the number of salaries is increased, the post office revenue is increased, the possibility of friction is increased; indeed it looks as if everything had a chance of being increased save the spread of education. Surely the Department must have real control.

(b) Again *the Department is partly a controller, partly a manager.* The combination arose out of a historical situation which no longer exists, and with the change partly in the situation the justification for the combination has gone. Every year shows that it presents unnecessary difficulties, that it leads to large financial commitments which might be dispensed with, and that it prejudices the power of the Department as the controller of education. Let Government divest itself of the schools and colleges which it manages, let it hand them over to appropriate bodies, and a two-fold benefit will result. In the first place, there will be no more of these financial inequalities to which we have drawn attention when dealing with the provision in the Budget for colleges and schools. The tax payer will gain by this as well as education. And in the second place, the Department with an enhanced administrative force, and a strong inspectorate, will be able to exercise a control over education that will recognize merit, encourage the teacher, stimulate the adoption of truer standards, draw forth interest, and make education a powerful factor in national development. The opportunity for the initiation of such a policy lies open to Government; the need for it is urgent. Let Government seize it; and everyone who values education, who participates in it, and who supports it, will welcome this step from chaos into a control which stabilizes and enriches education, and links education with the highest aspirations of the nation.

iii. There is urgent need for a clear *realization of the part which inspection plays in education.* An inspectorate has at least a three-fold function. It must acquaint itself with what is being done in each school and with the standards that obtain, and in gaining this acquaintance it has to keep these standards at the highest possible level. Then it has to render assistance to the teacher, enabling him to come into contact with educational methods and advance, so that his teaching may profit. And further the inspectorate must satisfy itself that the money which is being given to schools out of public funds is being well spent. The inspector has a relation to the pupil, the teacher, and the tax-payer. In present circumstances he cannot discharge all these obligations, far less discharge them satisfactorily. The result is that education suffers, and suffers seriously. There is a feeling, the strength of which I have been surprised to note, that what is spent on inspection is in large measure not well spent. There are two grounds for this. It has been represented to me that there are those engaged in the inspecting agency who do not command respect. This is a matter into which I am not competent to go; but if there is ground in this complaint there is little difficulty in discovering it and surely there can be no difficulty in taking the appropriate steps. If the inspectorate is to carry

out its manifold duties there must be no dubiety as to the professional and educational qualifications of those who compose it. At the same time I must say that anyone who compares the inspectorate of the present day with that of, say, twenty-five years ago, has grounds for satisfaction. The other ground is that even when the best of inspectors visits a school he can do so little. That is due, as we all recognize, to the smallness of the body on which such responsible duties fall. The meagreness of expenditure on the inspectorate is really equivalent to an unsatisfactory employment of public funds. Were the amount doubled something of real value could be done at once. If it is kept at its present figure there is not a body which is sufficient to do anything approaching justice to the schools, the scholars, and the teachers of the Presidency. No wonder then that people say, if nothing better can be done than is being done, why do it at all? Such a question is really a counsel of despair. Let us be grateful for the work which is being done at present by our inspectors and inspectresses amidst almost insuperable obstacles. But let us also press upon the Ministry the need for the recognition of the true place of the inspectorate in education, and for the incorporation of this recognition both in educational policy and in the Budget.

iv. We need a clear recognition by the State that *there is only one way by which the education of this Presidency can be advanced with soundness economy and rapidity*. And that way is—*by welcoming into a partnership of effort, on a basis of equality, every stable agency that seeks to promote the education of the youth of South India.* Let us take it that Government will speedily inaugurate a policy of divesting itself of management, and of confining itself to inspection, administration, and control. We are then left with two great agencies for the diffusion of education: local and private. These put into the education of the Presidency large sums of money. Local and Municipal Boards, out of their own resources, that is, out of the money which under statute they raise by taxation, make a contribution of forty-five lakhs towards the spread of education. Private effort, out of its own pocket and perfectly independently of what Government give, makes a wholly voluntary contribution of fifty-three lakhs per annum towards the same object. These are partners in the magnificent enterprise of training the minds and characters of the young men and women of South India. They are partners entitled, on the basis of work done, to receive equality of treatment at the hands of the State. But the present Budget says No, and several budgets which we have examined in past years also say No. Not only that, but the Report of the Director of Public Instruction tells the same tale. Look at such a sentence as this. The Director is speaking of equipment, and he says:

During the quinquennium equipment grants to the extent of over two lakhs were paid to aided schools, and subsidies for equipment amounting to Rs 76 lakhs were paid to local bodies for equipping high and middle schools.

Such inequality of treatment is almost unbelievable. How is education to progress in this way? And the position becomes even worse when we take note of another statement in the Director's latest report. He is dealing with the increase in the amount which has been expended on education in the course of the quinquen-

nium from different sources, public, local, and private. And as regards that which comes from local sources he says :

The increase in District Board and Municipal expenditure was largely met from the Provincial subsidies to local bodies.

Thus it comes about that we are not justified in speaking of the local bodies as making a contribution of forty-five lakhs from their own resources, for a certain portion of that is, as we now know, a grant from Government which has passed through the books of the local bodies. On the same analogy some part of Government grant-in-aid might be included as their own in the contribution which private agencies make to education. But in what I have stated, that is not done. The fifty-three lakhs which these agencies give is a contribution made entirely out of their own resources. And yet, as the Budget shows, these private agencies which are carrying the heaviest part of the burden of the education of the Presidency, and which are contributing so generously out of their own pockets, receive at the hands of the State treatment which is discouraging and unequal. They are partners entitled to equality of treatment on the basis of work done. And the State time and again through its budget says, No. And so long as the Ministry allows that No to stand, so long as it does not use every endeavour to secure its removal, so long as it abstains from initiating a policy which will change that No into Yes, by the aid (if need be) of legislation, so long must the Ministry regard itself, and *submit to be regarded, as placing a definite obstacle in the way of the spread of* education. Can it be that the Ministry of Education will continue to put a barrier in the way of the attainment of that object which it was specifically created to advance? Let the Ministry save itself from this reproach, let it place local and private effort on the basis of a partnership, neither partner receiving preferential or partial treatment, both receiving that treatment and only that to which their share in the great enterprise of education entitles them, and it will roll away the reproach of the present position. It will do more than that. It will pour new life into education, and set it on a cycle of advance which will surprise its critics, rejoice its supporters, and lead the country into reaches of unexampled prosperity and power.

The month after next I shall have completed thirty-five years spent in the service of the education of this Presidency. It has been a great privilege. Much has happened in the past to give one great hope ; and the best is yet to be. I count it a joy to have served so long in the cause of one form of aided education, that form which every year confirms me in regarding as the type most definitely suited for the supply of India's deepest needs. But I have sought consistently all through these years to support the cause of aided education as a whole, of which as the Director's Report informs us the part under Christian management is only twenty-five per cent. For I believe that in aided education the country possesses a key which unlocks the door into an education of which it may be proud and from which it will reap the fullest benefits for personal character and national advance. But matters educational cannot long continue in this Presidency in the condition which Budgets and Director's Reports disclose. Much may be done by more satisfactory financial adjustments. But that will go only a part of the way. What

is needed is a definite policy wherein the considerations which I have mentioned will find their appropriate setting and receive their true recognition. I appeal most earnestly to the Ministry to see to it that no time is lost, and that such a policy is speedily conceived, generously executed, and consistently adhered to.

MADRAS W. MESTON.

How We Know

Much of the confusion that has attended the attempts to construct a theory of knowledge is due to the conception of it as an entity rather than as a process. Cowper represents the popular opinion in saying, 'Knowledge dwells in heads replete with thoughts of other men.' The mind of man is thought to be a receptacle designed to contain knowledge even as a bucket contains water. To be sure the contents are mental and therefore immaterial, intangible and incapable of physical manipulation. On that account it is difficult to compare them with the material things to which they are related. The realist who undertakes to discover the presence or absence of correspondence has thus a tantalizing problem on his hands. The idealist too can scarcely escape the danger of regarding the fragments of knowledge as in some degree structural when he attempts to apply his test of coherence. The analogy of a tool or an instrument which the pragmatist employs runs the same risk of a structural interpretation.

Is this danger one that can be obviated? The modern psychological emphasis on process ought to correct some of the mistakes of the past. Of course there is no such thing as a contentless process either in the mental or mechanical worlds. It would be useless to suggest that we abandon the use of all substantives in psychology as applied to the mental life. It always *tends* to be misleading to depict the facts of mental experience in substantial terms, and that tendency can only be obviated by remembering with diligence that the substantive is a shorthand way of describing a process or the stuff of a process. The crux of the problem is not 'how we acquire knowledge,' but 'how we know.' Knowing is a function of our living, pulsating organisms. As McDougall has expressed it, we do well to describe it as 'a cognitive disposition.'

The view of knowing as a process, a function, or a disposition immediately associates it with the living organism. It is exceedingly doubtful whether philosophy has yet realized the full implications of regarding the mental life as a unity. The time has forever gone when knowing can be treated as the business of a separate 'faculty' of consciousness. The entire conscious organism in an attitude of awareness is what we understand by cognition. That awareness is usually, if not always, aroused by a situation to which the organism reacts affectively by either a pleasant or an unpleasant tone. And the attitude tends to express itself in some overt and appropriate way. Every segment of mental experience is characterized by all three phases, the cognitive, affective and conative. The analysis of our experiences into these elemests is made for theoretical purposes, but they never exist in isolation. The extent to which feeling and active elements enter into and fuse with cognitive responses is only beginning to be understood. Affective and conative dispositions not only co-operate with, but stimulate the cognitive disposition.

There is no fact more obvious in regard to organic life, both physical and mental, than development. The mental life, like the neural, unfolds from the more simple to the more complex, from the more vague to the more articulate. James' pictorial description of the infant's mind as 'a great, booming, buzzing confusion' is apparently correct. Mental development represents a growth from chaos towards order, from confusion towards differentiation and organization. In response to that growth life itself and the environment increasingly assume form, harmony, proportion, and relations. The knowing process or cognitive disposition experiences this characteristic growth, not in separation but as one phase of the total developing organism. It shares in a natural and regular organic process. Knowledge is neither something with which we are born, nor yet something thrust upon us. It is the achievement of a mental ability, unfolding in accordance with the normal development of organic processes.

The understanding of knowledge processes thus involves nothing less than a comprehension of the way or ways in which the mental life develops. Experimental researches are continually adding to the sum-total of our precise details in that field. Some differences of interpretation emerge in regard to the observed facts, but in the main there is agreement as to the direction of development.

Let us begin with the organism. What are its characteristics? On its neural side there are three: irritability or the ability to receive sensory stimulation, conductivity or the power to transmit the stimulus to the centre of the nervous system, and correlation, or the ability to organize stimuli with relation to one another and with relation to response systems. Here again we are analyzing for theoretical convenience, but the experiences are frequently so rapid and so well integrated as to appear as unities. The sensory apparatus is stimulated by the various qualities of an object, visual, auditory, tactual, etc., but in many cases we are only vaguely aware of the qualities, though we are quite definitely aware of the object. Doubtless the cognizing of an object was gradually achieved through being sensorily stimulated by its qualities, and learning to associate them in the object. But in childhood that is always very vague and confused, and increasing acquaintance with the object results in a growth in the ability to define its qualities. There is no such thing as a mythological sensation which serves as foundation for a perceptual wall and a conceptual roof in a mental structure. Logically we may find it convenient to trace a growth from sensation through perception to conception, but, actually the processes go hand in hand and inter-penetrate. The experiences of infancy and childhood are not analyzed as many of them are in more mature life. Ability to make analyses and differentiations unfolds with the growth of reflective thinking. But capacity for being stimulated by the sensory qualities inherent in objects is part of our native equipment.

The perceptual process is somewhat more complex than a bare stimulation of qualities. It is, of course, a response of the organism to a sensory stimulus. It involves however the operation of the neural functions of conduction and correlation. A person walking in the road may hear a noise behind him. He turns around and sees an approaching motor-bus, whereupon the auditory qualities are associated with

the visual qualities in the cortical centres, and a perceptual process is the result. If in the past he has learned to associate the name 'motor-bus' with an object that has stimulated similarly his auditory and visual centres, he knows this present object as a motor-bus. The perceptual process thus involves the association of a group of sensory stimuli which he has selected from the various stimuli that are competing for his attention. If the person fails to make the proper selection or the appropriate grouping of stimuli, his perception will be characterized by error. First impressions and initial perceptions are often vitiated by such errors, so that revisions are constantly necessary. How then are we to know whether our perceptual process is functioning correctly or not? It is with the growth of the analytical, differentiating ability that we are enabled to check up our results. Sometimes we find that we have made fortuitous associations in the first instance. The increasing capacity for discrimination enables man to determine what are the essential and what the accidental qualities of an object. Probably many children regard the horn as a *sine qua non* for a motor vehicle. But one day they see and hear a truck belonging to the fire department which has a gong to warn pedestrians instead of a horn. Whereupon their original percept undergoes revision in consonance with the new facts assimilated. In the early stages of human thinking magical associations are an obvious example of grouping stimuli which happened to go together in first experiences. Correcting the errors of perceptual processes is thus made possible as the exploring and discriminating functions operate in subsequent experience. Like all cognitive processes, the perceptual makes use of the trial-and-error method for revising its results.

The organism is stimulated in its sensory apparatus by the various qualities which are correlated in the cortical centres, and associated with certain objects. Thus these sensory qualities that we experience come to function as signs of the presence of objects. The experience leads us to perceive an object rather than merely sense a quality. In truth we never sense qualities apart from objects which we regard as stimulating the experience. Sometimes the sensory quality or qualities may have been so associated in past experience as to suggest another more remote object. But in any case the sensory qualities serve as a sign-language bearing meanings to us with reference to objects either present or remote.

The form of our perceptual content is not determined solely by sensory experiences. Past experience and education play their part in determining the form it takes. If one were to see a motor-bus for the first time, he would perhaps have had experiences of buses drawn by horses, and of motor vehicles of other sorts which he would be able to synthesize in a new percept. That process by which the newly presented object is related to or associated with the antecedent content of consciousness is sometimes called apperception. Every perceptual act involves a synthesis of the familiar and the novel. It integrates elements furnished in apperception with elements experienced in a sensory way. If the object is one with which we are familiar from past experience, the character of one's memories determine the manner of synthesis and the character of the perception. The cognition becomes a re-cognition.

When I see a motor-bus, how do I know that it is a motor-bus? The cognitive process is apperceptual as just described. It involves the sensing of the qualities of a present object. And it includes the memory of similar objects. But those other motor-buses are not present to sense that I may compare the present with the past. My memory takes the form of an image, and how can one compare a sensory image with a memory image? It is certainly not so simple as the associationists supposed. For again we are reminded that the terms 'image' and 'imagery' are equally abstract as 'sensation' and 'perception.' Imagining is a process by which we are mentally and more or less vaguely aware of experiences, qualities or objects not present. The question as to whether thinking is possible without images is one on which psychologists are not agreed. The divergence of opinion is partly due to interpretation and partly to definition. A good deal of experimental work has been conducted in the past few years on this problem, and a number of psychologists claim that introspections sometimes disclose thinking that has no imagery, no dependence on sensation. Others for whom images constitute the stuff of the thought processes would interpret the same data differently. Recently I read an introspective account of this kind in which the subject disclaimed having any images, yet recalled the 'location' of the object with reference to others. Once more probably much confusion is due to the survival of the habit of regarding imagery as an entity rather than a process in which we utilize past perceptual experiences for dealing with present situations.

It was remarked that sensory qualities come to function in experience as signs of the presence of objects. This process by which a quality or a thing serves as a sign or a symbol to us is the meaning of meaning. To be aware of a meaning is to comprehend something of the relations that an object sustains to other objects. Meanings have no substantial existence, and no end of confusion has been experienced by regarding them as if they had. They are not discoverable or attainable entities, but are facts of the mental life, all of which is more comparable to a stream than a structure. Meaning is an activity of consciousness, difficult of analysis because it is always in advance of our attempt to penetrate it. It indicates our attitude or reaction to an object, and changes the moment we begin to comprehend it, because then our attitude and not the object occupies the focus of attention.

The development of meanings is characterized by growth towards definiteness and discrimination. It is synonymous with understanding the function of an object in a particular situation. Obviously with the evolution of the organism from infancy to maturity this process involves diminishing obscurity and increasing definiteness. It is marked by growing stability and coherency with other meanings, as a consequence of which we are enabled to respond more appropriately to various situations. Meanings that are in any degree stabilized and made coherent with other meanings enable us to anticipate typical consequences and act accordingly. Complete elimination of indefiniteness and obscurity is seldom if ever possible, but development is towards such a goal. The more we are able to stabilize and make coherent our meanings the better are we able to systematize and organize them for

reactions to future situations. Thus the function of signifying that characterizes our meanings is gradually widened so as to take in not only single objects but classes of objects. Classification and scientific definition is thus the culmination of the meaning process.

The significance of meaning reactions is with reference to the future as well as the past. The meaning, as observed already, gives to an object a symbolic value. Otherwise things would be, if such an experience can be imagined, merely blind stimuli. But when a meaning is associated with an object, it is made available for use in new situations. Problematic situations mean that our knowledge is incomplete, and that we desire to know what would be the result if we followed a particular course of action. The meanings associated with objects in previous experiences are the instruments whereby we attempt to solve our problems. If the meaning has been generalized in what logicians call a concept, it is capable of a wider application to such problematic situations, because it has been in the generalizing process liberated from its accidental features. Thus the things that we do and are able to do with our meanings indicate our interest in giving them adequate and appropriate expression. The union of the general and the particular meanings, or of conceptual and perceptual knowledge can only be in concrete, active situations. The application of a scientific hypothesis to a specific situation is an illustration of the way in which a generalized meaning becomes united to a particular situation, thereby giving significance to the new, and recognizing it as a specific embodiment of the conceptualized meaning.

One characteristic tendency of the organism is to act. That tendency expresses itself in a number of characteristic attitudes or dispositions to act in particular ways. The reason that we assume these attitudes or characteristic dispositions to activity is to be found in the interpretations we have made in regard to objects towards which we have reacted in the past. Our meanings are thus anticipatory in function. They symbolize objects and relations, and these symbols enable us to meet similar situations. People assume different attitudes towards the same object, or the same person assumes different attitudes at different times because of the different meanings associated with the object. Our attitudes thus indicate a variety of possible meanings towards an object, or in other words a variety in the ways in which cognitive reactions may take place. The attitude is the mental set of the individual that furnishes the clue to his readiness to meet a particular situation in a characteristic way. It is determined largely by the bonds that have been formed in the past between situations and responses. But it operates not only as a determinant of activities, but of knowledge. Attitudes have cognitive as well as conative significance.

An attitude is equivalent to a person's mental set. It is thus an indication of his interests, of his felt needs and the way he proposes to satisfy them. Our contacts with external objects result in affectively toned experiences, some of them agreeable and some disagreeable. These affective reactions are indicative of needs to orient ourselves to the situation as presented. Our equipment includes a core of interests, things that attract or repel us, another core of knowledge fragments

gathered in the past, and our association of these with the present situation results in an orientation attitude. It may mean an addition to our cognitive equipment or at least an adjustment of it, as well as a tendency to respond to the situation conatively. Thus every occasion when we assume an attitude that is in any degree cognitive, we do so because we are persons interacting with our environments which presents specific stimuli to the knowing self. All attitudes, all cognitive responses are in some sense biologically purposive.

The attitudes possible to a person are numerous, and may include the religious attitude, the aesthetic, the scientific, the parental, the combative, the pacifist, the play, the gregarious, etc. None of them is to be identified with a single act, but rather with a whole body of actions which indicate one's tendencies to act characteristically towards some environmental situation in which one is either positively or negatively interested. A New York architect described the pyramids to his friends as 'very large buildings, badly out of repair.' Napoleon drew up his army beneath their shadow, and challenged his men, 'Soldiers of France, forty centuries are looking down upon you.' The same environment carried different meanings, different attitudes, different orientations.

Because an attitude is a factor of personal experience, an immense variety of attitudes is possible. Each of them has cognitive significance because knowledge is experienced in our orientations. It is not possible to single out a specifically cognitive attitude in discrimination from an affective or a conative. Like all elements of the mental life, attitudes participate in all of these primordial factors. It is an incomplete view of the character of our attitudes to suppose, for example, that knowledge is only possible when one assumes the scientific attitude. It is partly due to regarding knowledge as an entity rather than an activity. Cognitive factors enter into all personal attitudes, the religious as well as the scientific, the play attitude as well as the work attitude, the appreciative as well as the critical.

The environment includes some factors that are inorganic and some that are organic. Personal attitudes are sometimes classified on the basis of the discrimination which we naturally make between the non-living and the living. Towards the former our attitudes are frequently mechanical; towards the latter they are social. If the individual be an animist he may regard an inorganic object as the abode of a spirit and then take a social attitude to it. In regard to facts observed and assembled about persons, one may assume a mechanical attitude, but towards the persons themselves his attitude is necessarily social. The attitude assumed towards inorganic objects is called mechanical, because they are objects which have no life or power of self-motion, but which we may move and manipulate in accordance with our desires and purposes. If we treat a living object in a similar way, our attitude is mechanical in a derived or secondary sense. The social attitude regards the other of the relationship as a person, like ourselves more or less, and not a thing incapable of self-determination.

It is perfectly obvious that there are some elements that enter into a mechanical attitude quite impossible in a social attitude. Things may be regarded and manipulated as means to ends; persons ought to be regarded as ends in themselves,

Things are inert; persons possess the power of motion and resistance. Things are unsusceptible to irritation and feeling; persons are susceptible to both. Things are unconscious; persons are not only conscious, but self-conscious. Things possess no power of self-determined responses to stimuli; persons may choose between alternative ways of responding to a stimulus. Such are some of the discriminations that form the background of our differentiated attitudes, the mechanical being an attitude towards an object regarded as a thing and the social an attitude towards an object treated as a person.

Can we describe the types of behaviour that result from these two types of attitude? When our attitude is of the mechanical type it expresses itself in such tendencies as physical manipulating, measuring in various ways, making calculations with and with respect to the object, taking the object apart if it is feasible and reconstructing it in order to examine the relations between parts and the whole, subjecting it to various conditions in the laboratory and observing the results, and so forth. On the other hand the social attitudes are characterized by the tendency to regard oneself as a member of a group or groups rather than as an isolated individual, the tendency to seek for mutual support from like persons, the tendency to seek social contacts for communion and sympathy and to escape from loneliness, the desire to share one's experiences, all forms of herding or gregariousness. These socializing tendencies are just as surely the outcome of instinctive and impulsive human nature as are the mechanizing tendencies. Nothing is more obvious in regard to the nature of personality than its fundamentally social character. The individual is born as a member of society. He is much more the product than the creator of society. Self-consciousness is a social self-consciousness. Sociologists have described it as 'the we-feeling.' The unfolding of personality is characterized by a process of learning consciously or unconsciously to think, feel and act in co-operation with other persons, though that does not mean being cast in identical moulds. It involves an increasing sense of shared privileges, of social responsibility and control, including control of oneself, and of enrichment in personal character.

If we revert to our perceptual experiences we shall find this differentiation appearing. Some of these responses, like those including relations of a spatial or temporal character, involve cognitions of measurable and mechanically manipulable objects. One of the observations made in the testing of intelligence is that there is a growth in the accuracy with which children are able to perceive the spatial and temporal qualities of objects. There is in normal children an observable progress away from vagueness towards definiteness, and distinctness. On the other hand there are many facts to which we attribute social meanings about which we get our information through perceptual processes. We learn to interpret the significance of social reactions such as grimaces, gestures and sounds by social perception. The social reactions of other people such as affection, sympathy, hatred and envy are known to us through perception of persons acting in characteristic ways. We learn through experience that various social attitudes are expressed by typical gestures and grimaces, though of course man has the ability of 'acting a part' at times. Social perception also takes the form at times of sharing in other peoples' responses,

a fact which some psychologists would interpret as the operation of a group mind. However it be explained, it is frequently true that we see with the eyes of the group, and hear with its ears, rather than reacting individualistically. Our prejudices and pridilections, our attitudes and activities, our appreciations and animadversions are ours because we belong to groups and share in their responses.

We have observed that some of our meanings are particular, and some are general. When we are aware of an object as possessing certain essential features, and are able in our thinking to strip it of its accidentals, we classify it. The processes of knowing include the mental operation of assembling the common factors of various experiences, and incorporating them in concepts or generalized meanings. This is done whether the factors of experience be of mechanical or social types. The consciousness of meanings, the utilization of symbols, the formation of abstractions, the enrichment and revision of concepts and all such cognitive processes operate psychologically in the same fashion whether we are dealing with social or non-social phases of experience. The principle of development functions in two main directions, namely in the formation of new meanings of the generalized type, and in the revision of those already in use. Our knowledge reactions are carried on by processes of comparison, discrimination, generalizing and classifying whereby new meanings spring out of old ones, and old ones are clarified. Such is the way in which knowledge grows from more to more, and it makes no difference psychologically whether we are using distance, duration, shape, weight, plasticity or such non-social meanings, or co-operation, justice, sympathy, loyalty, rivalry, competition or such social meanings.

The knowing process is thus a process in which trial-and-error learning operates all along the line. Experimental work has shown that learning is a process involving a series of trials, often with repeated failures and deferred success in the gradual attainment of the desired end. The learning of animals has been observed to be distinctly of that type, and observations of the learning of children lead to the same conclusion. There is no mechanism in the human organism that can guarantee initial success in any kind of learning. We muddle our way to successful achievement just as truly in cognitive reactions as in gaining control of our muscles for operations requiring skill. The use of the hypothesis in scientific explanation is a good illustration in point. It is always formulated provisionally, and frequently it has to be amended to account for facts not reckoned with in the initial attempt to explain, while at times it has to be totally discarded in the light of subsequent observations. While it is in the process of testing we call it a 'working' hypothesis, a phase which is itself a recognition of the way in which scientific knowledge is built up. Nothing could illustrate more clearly that knowledge is a process, not an entity. Here again our observations are equally applicable in the social and mechanical spheres, in the world of people and the world of things. There is the possible exception that a man is not always as ready to revise his estimate of a person or group of persons as he is of a thing or class of things. The possibility of persons 'acting parts' that are different to their habitual dispositions and characters results sometimes in greater delay in successfully knowing them. Even inanimate objects

bewilder us at times through presenting aspects that are exceptional and unfamiliar. In the normal cognitive reactions, however, whether applied to social or non-social situations, the trial-and-error method is the way to the attainment of success.

Madras

A. S. WOODBURNE.

A Study in Superstition

Not long ago, an acquaintance of mine showed me a cutting from a daily newspaper, in which it was stated that the inhabitants of a certain county in England had made a representation to their municipal authorities to remove the number 13 from the doors of their houses, as it boded ill-luck to them. My friend was inclined to treat the whole affair as a huge joke, but it set me thinking. If superstition played such a great part in a man's life, then certainly it was a subject worth studying. It looks as though the average man of to-day has fallen into the habit of talking about superstition with a sneer. This is not a healthy habit. It shows that a cheap kind of critical spirit has robbed him of the desire for true knowledge. An eminent author declared recently that no intelligent and perfectly balanced person is superstitious. If this be true, the world for the most part, must be composed of unbalanced, unintelligent beings, for superstition is a universal phenomenon. Superstitious beliefs are to be found in all countries of the world and I have yet to meet a man who would deny under rigid cross-examination that he had a few superstitions tucked away among his inhibitions. The mere fact that it does not conform to certain rational standards that we have set up should not prevent us from knowing all about a subject of such human and world-wide interest. Fortunately however, with the coming into prominence of the psychological method of looking at things such a narrow and one-sided view of superstition is passing away. For any criticism we may level against superstition should not affect the fundamental psychical facts underlying the phenomenon. Superstitious ideas and experiences are inextricably mingled with ideas and experiences of ordinary every-day life and are therefore necessarily coloured by them. It is one of the tasks of psychology to distinguish the superstition dynamic under all forms of thought through which it operates. A reasonable and sympathetic study of the various superstitions of mankind is only possible in an individual or age which feels no constraining call to suppress or obliterate any particular body of facts in our experience.

Although one may not be 'exactly superstitious' it is to one's own advantage to know something about it. You cannot ride rough-shod over your friends' pet beliefs and yet be popular. A gentleman has been sometimes defined as one who does not wound others' feelings. If we wish to live up to this ideal we must respect other peoples' superstitions, for some do really feel very much grieved if these are treated with contempt. The other day I nearly got a black-eye when I asked a friend of mine who was starting out on a journey, where he was going, (a question regarded as inauspicious by many). It was then that I realized that although superstitions may be airy nothings, a superstitious man is a force with which to reckon, especially people like my friend who weighs about twelve stones. Recently I read in the papers about an American reporter who nearly lost his job because he applauded a song during rehearsal, a thing banned according to stage superstition. So we may conclude that it pays to know something about superstition.

Are we less superstitious than our fore-fathers? I do not think we are, although we certainly seem to take more pains than they did to hide this fact. This indeed seems to be one of the chief characteristics of superstition. You will find a great many who scoff at omens openly as 'bunk,' while they embrace them in private. Unlike in his pleasures, man is a hypocrite in his beliefs and superstitions.

Why do men still continue to be superstitious in spite of the enormous growth of rationalism that has characterized the progress of our modern civilization. Common-sense, education and even greatness has failed to displace this quality from human nature. Common-sense ought to tell a man that sneezing cannot have any effect whatever on his future life, but it does not seem to do so. I know quite a lot of people—shrewd and able men in other walks of life—who would grow perfectly frantic with anger if you happened to sneeze while they were discussing some future plan of action. Or again take the belief quite common in many parts of the world, that Friday is an unlucky day. This superstition has absolutely no business to thrive in American soil at all, if knowledge and history mean anything. But it does exist there in as deep-rooted a manner as anywhere. An American writer on the subject has taken the trouble to collect a number of dates from American history to prove that Friday has been its luckiest day. Here they are:

Friday, October 12, 1492. Columbus discovered America.
,, September 11, 1609. The 'Half Moon' entered New York Bay.
,, February 22, 1732. George Washington was born.
,, June 16, 1775. Bunker Hill was fortified.
,, October 17, 1777. Burgoyne surrendered Saratoga.
,, October 19, 1781. Lord Cornwallis surrendered York Town.

Superstition has a knack of persisting in spite of facts and figures. Even greatness has failed to dispel this quality from man. Both Julius Cæsar and Napoleon Bonaparte were notoriously superstitious and it is rumoured that President Coolidge wets his baits before he casts for pickerel.

One of the reasons for this profound grip that superstition has over human nature is to be sought in the great influence that our environment has upon us in moulding character. We are, to a certain extent, what our surroundings make us. From our childhood we are taught to be superstitious. We are asked to do certain things because they bring good luck, and not to do some others because they forbode evil. We are cuffed for saying inauspicious things, and praised if we understand and act up to the established superstitions of our family or community. The family circle, the child's most admirable training ground does its best to form in him the habit of superstition; and once the habit is formed, like all habits, it is very difficult to get rid of it. Even if education and enlightenment shake our faith in such beliefs, we still stick to them because any attempt to violate them is followed by an uncomfortable feeling closely allied to what is called the pricking of conscience. We are haunted by a vague sense of coming disaster. To avoid all this trouble we hold fast to superstition in spite of our better judgement. For the average man is an easy-going animal with a singular distaste for fighting moral battles. This feeling of uncomfortableness which troubles a man when he sets at naught some well-

recognized superstition, seems to be one of the chief factors which has helped to perpetuate superstition among mankind. It may be ultimately traced to a kind of moral cowardice.

That which differentiates man from the lower animals of creation, is often said to be his rationality. True as this may be, it is only one side of the picture. There seems to be in him, an irrational element also. While the animal is wholly irrational, the average man blends in him both the qualities of Rationality and irrationality. Often we show a singular distaste to reason out things; we like to stick to certain a priori opinions. It makes us feel very comfortable to do a thing because 'it is good,' though we are quite unable to find the reason for its goodness. It brings into play an element of mystery which greatly appeals to our imagination. I have come across people who, after making a hopeless mess of a job entrusted to them solely through their incapacity, feel perfectly blameless because they did it on a certain lucky day, at a very auspicious hour. They talked about the affair with the air of men who did their very best. Such beliefs put a premium on incapacity and as such are very attractive. Mankind simply loves to cling to certain 'truths' that have come through the ages, even though they may be quite unreasonable and this love, forms an admirable soil for the growth of the plants of orthodoxy and superstition.

Do superstitious beliefs ever come true? Sometimes they do and that too in a most remarkable way. You may call it coincidence or whatever you like, but the facts are there, and we cannot afford to wink at them. As an illustration let me refer to some of the incidents that took place during the recent excavations at the Luxor Valley. When the body of Tutankhamen was revealed to those who entered his tomb a mark was found on his face. The mark left by the fatal mosquito bite on the face of the late Earl of Carnavon was exactly in the same position. This remarkable coincidence is one of the many incidents in connection with the Luxor operations that has given colour to the claims of the superstitious who foretold all kinds of disasters for those who tampered with the tombs of the Pharoahs. The subsequent death of Mr. Benedite the distinguished French Archaelogist and Egyptologist attached to the Department of Antiquities at Cairo was further encouragement to those who believed in the fabled curse. Mr. Benedite who was directly connected with the excavations carried out by the late Lord Carnavon and Mr. Howard Carter at Luxor when the tomb of Tutankhamen was first opened, was the fifth archaeologist to die whilst the work was in progress. Speaking on the subject Mr. Arthur Weigall the famous Egyptologist says, 'while I cannot exactly say that I subscribe in believing in the efficacy of such curses, I must admit that some very strange things have happened in connection with the Luxor excavations. For example there was the case of Mr. Howard Carter's canary which he kept in his house. On the very day in which the tomb of Tutenkhamen was laid bare, a cobra than which there is no rarer snake in Egypt during winter months, got into the house and swallowed the bird. Now it is a fact that the cobra was the symbol of royalty in ancient Egypt. Each Pharoah wore it on his forehead and head-dress to show his power to strike down his enemies. Lovers of the mysterious naturally interpreted this incident as the killing of the peace of the English Home by the Royal cobra'.

Another way in which superstitions do come true may happily be explained away more easily. A superstitious belief has such a great hold on a man, that the moment he does anything which according to that belief forbodes evil, panic takes hold of him and colours his future action. For example, let us take the belief that the breaking of a glass brings bad luck. The man who believes in this, is entirely upset, if by chance he happens to break a looking-glass or any such object, particularly, if he has high-strung nerves. Neither his physical nor mental powers are at their best then, and naturally he makes a muddle of the next job he undertakes. Our beliefs make or mar us sometimes, and superstitious beliefs are no exceptions to the rule.

A few ways in which superstitious ideas may have originated may now be suggested. The imperfect application of the causal category seems to be responsible for some superstitions. Sometimes it is taken for granted that two events which follow each other in time are causally connected, and if the event which came second is of an unfortunate character, the cause for it is sought in the event which preceded it. As an example let us take the belief that it is unlucky to walk under a ladder. A, who walked under a ladder might have got a bucket of paint on his head or B, an influential member of a little village community, might have had a wire saying his son died, immediately after emerging from under a ladder. Such mishaps being of a dramatic character are brought well before the public eye. The public seek for the cause of the catastrophe in the event that immediately preceded it, i.e., walking under a ladder, and the belief that it is unlucky to walk under ladders is firmly established and is handed down to generations. Again imperfect deduction from particulars might account for some other superstitions. Because A, B, and C, had each a mishap on their journey after a black cat crossed their path, the conclusion is at once jumped to that it is unlucky to meet a black cat on the way,

Superstition is closely allied to magic and many superstitious ideas can be traced back to man's primitive days when magic held the field. The body of superstitions connected with the 'evil eye' is a case in point. In primitive society the stranger who came from outside was a mysterious figure who was invested with all sorts of occult powers. He was a live wire and had an uncanny capacity for working harm. Hence the zealous guarding of children and precious objects from curious and strange eyes, because it forbodes evil so to expose them. The magical idea that some people can harm objects by merely *willing* it, might also have helped to strengthen superstitions of this sort. A Swedish mother places books under the head of a new-born infant so that it may be quick at learning to read. Money is placed in its first bath to guarantee its wealth in future. In superstitions of this sort again the hand of magic may be seen. Here it is taken for granted that when two things come into contact, the one has the power of transmitting its distinguishing qualities to the other (contagious magic).

Some superstitions seem to have been deliberately invented to protect property. In this respect they are not very much unlike 'taboos.' When some object is in constant danger of being stolen and when there is no efficient way of adequately protecting it, it is often found convenient to make a superstition or two circle round the object.

It is affirmed that a curse—usually a horrible one—will fall on whoever dares to touch it. The instinct of self-protection being strong in man, he is sure to keep his hands off the same, even though greed may impel him to steal it. Mr. Arthur Weigall the famous Egyptologist, who has made a special study of Egyptian superstitions in general and of Tutankhamen's reign in particular, is of the opinion that the curses of a superstitious nature attached to the tombs of the kings at Luxor, were primarily intended to terrify the tomb robbers of the period who might smash up the mummy in searching for jewelry or otherwise damage the tomb.

Perhaps some superstitions were invented by the elders of a tribe or community with a view of sowing into the rank and file, the germs of a moral code. A moral maxim dry and bald has a very little chance of having a popular following, but if the same thing is put in terms of profit and loss it is more appealing and stands a better chance of success. Hence the superstition that it is unlucky to steal money from a church or temple. Perhaps such beliefs are not conducive to the highest kind of morality but still a beginning is made in the right direction.

No belief which we now regard as a superstition ever originated as such. Many of those beliefs which we now regard as superstitious were originally, responses to felt needs in a past age. Gradually owing to the operation of many influences, the need itself ceased to be felt, but the response continued. *Some of our superstitions are mere survivals.* Says Tylor in his *Primitive Culture*, 'When a custom, an act, or an opinion is firmly started in the world, disturbing elements may long affect it so lightly that it may keep its course from generation to generation as a stream once settled in its bed may flow on for ages. An idea the meaning of which has perished for ages may continue to exist simply because it has existed.' As an example may be mentioned the belief common in India that it is unlucky to shake one's legs while sitting on a cot. The origin of this idea may be traced back to the days when our ancestors were mostly farmers and agriculturalists. It was common then to keep under bed-steads vessels containing milk, which were sure to be upset if people sitting on these bed-steads were not careful. They were asked not to shake their legs purely as a measure of precaution. When with the changing of times separate rooms and store-houses were built for the produce of the dairy, such a precautionary measure lost all its significance, but it still persisted and has been handed down to us.

Much valuable information as to the nature of superstition can be had, if each of us by means of an introspective study finds out the factors which from our very childhood have gone to give us a superstition complex; and a comparative study can be beneficially made of the results thus obtained. Here is one such analysis of the superstition complex made by Mr. H. I. Philips during the course of an interesting article on 'Omens' in a recent issue of the *American Magazine*. 'The first superstition that I remember distinctly' says he 'came to me when I was seven or eight years old in the form of a rhyme quoted by a boy who was with me. We were walking through a street paved with old-fashioned huge, square flag-stones, when this boy cautioned me never to step on cracks. As he put it,

If you step upon a crack
You will break your mother's back.

This struck me as a rather horrifying suggestion and I thereafter stepped over all side-walk cracks. My parents were but mildly superstitious. They believed in a good many old-fashioned weather-portents such as, ' Rain before seven, clear before eleven ' and ' A curdled sky never leaves the ground dry.' I had a grandmother who used to interpret events from the formation of leaves at the bottom of a cup of tea and another who thought that there was some particularly medicinal properties in a handful of April-snow. But my own superstition complex must go back beyond even this time. I had some ansectors among the first Massachussets colonists up amid Salem who were a superstitious lot and my susceptibility to superstitions may have come from them. The belief that the evil eye can be averted by crossing the fingers and that it is bad luck to walk under a ladder, I heard as a small boy and looking back it seems to me, my early boyhood playmates had more than their reasonable quota of superstition. The horse-shoe superstition was then the outstanding one in this country and as horse-shoes were then plentiful I saw to it that I had a big collection. I never questioned the authority of omens. They seemed good things to have around and I just appropriated them.'

Is there any value in superstition? At first sight such a question appears to be absurd, but such an appearance of absurdity is only superficial. For let us remember the fact that an idea may have worth and subsequently pass into the category of superstitions. As I have already observed, some ideas which we now regard as superstitious seem to have been originally made with a view to instilling into some men, the germs of a moral code; and if this end was acheived, then they have certainly played a valuable part. It is not altogether impossible to conceive of certain types of thought which we now ban as superstitious, as playing the part of an ethical fly-wheel of society, at a certain stage in man's moral evolution. Be this as it may, a study of superstition in all its aspects seems to be very interesting, provided we undertake such a study with an unbiassed mind.

S. P. ADINARAYANIAH.

MADRAS.

The Validity of Religious Knowledge from the Idealistic Point of View

It has been said that as art is make-believe so religion is belief, and the falsity of the former is illusion, whereas if the latter is false it is delusion. Is religion false, are we under a delusion when we believe ? How shall we know ? Shall we sit back and hum 'Some day we'll understand ? ' In the day when the trumpets shall sound we may find out whether it was all a fake, an idle imagination or whether there is really something in it. Is that sufficient assurance for the religious man ? Or do we run only a coward's risk, thinking to believe will never do any harm and may be effective in the end. Assuredly, such are not the attitudes of the religious consciousness. The man who believes has faith not in a hazy venture whose reality he doubts but professes only as a safety measure which may be unnecessary. The religious man is convinced, he is a man of conviction, more certain of the spiritual ideals in which he places his trust than of all else in the world. In fact all else exists only by virtue of the spiritual and is dependent thereon.

Does that mean that the religious man has proof of that in which he believes ? Our answer must depend on the meaning of proof. To demonstrate by syllogism in Aristotle's way is certainly impossible. Nor can we hope to mix spirits in a laboratory and produce God. The demonstrations science requires are not possible of religious knowledge. And yet we must insist it is true. In fact we would go so far as to say it is the ground and basis for all truth and thus every truth is a demonstration of religious truth. 'The heavens tell His glory,' 'All earth testifies of his goodness,' these are true sayings. The question is how are religious truths shown to be valid. Validity, we know, is always the problem of philosophy. We may speak of the history of religious doctrines and ideas, of their psychological or social character and we are still in the realm of science. But when we ask for the basis of these ideas in reality we enter upon a metaphysical problem. That means that we are faced not only with this problem but with other issues as well. To answer the first we must ask also about the general nature of reality, about the place of the religious consciousness in life, it's claim to a hearing, whether there be degrees of reality and the principle on which the scale is organized. It is the answer of idealism to these questions that we wish to consider here.

Unfortunately, for many idealism has come to be defined in terms of the psychological idea. The Berkeleyan interpretation that only ideas in my head are real and have no objectivity has been taken to be the core of the idealistic philosophy. However, this is a gross misunderstanding. What idealism stands for is rather this: that Reality is a system in which everything that is has its place, that this Reality being all-inclusive is not to be explained in terms of the lowest and simplest forms of existence but in terms of the highest and most inclusive, and

these highest are taken to be our judgements of value, beauty, goodness and truth. In other words the nature of the ultimately real is to be found in what we recognize as greatest and best in our own experience, or if we prefer the language of evolution, to know the universe we have to read back the nature of the latest consequent into the remotest antecedent, the principle of the whole embraces in its evolution every phase of the actual. The lower phases are not independent facts but are abstract aspects of the whole, which is expressible only in terms of self-conscious experience. Idealism means essentially the interpretation of the world according to a scale of values, according to Plato's Idea of the Good or Bosanquet's Principle of Value. Ideals are often supposed to be subjective but their objectivity is the very platform of idealism. Martineau has forcefully expressed this objectivity in the following quotation: 'Amid all the sickly talk about "ideals" which has become the commonplace of our age, it is well to remember that, so long as they are a mere self-painting of the yearning spirit, they have no more solidarity or steadiness than floating air-bubbles, gay in the sunshine and broken by the passing wind. The very gate of entrance to religion is the discovery that your gleaming ideal is the everlasting Real, no transient brush of a fancied angel's wing, but the abiding presence and persuasion of the Soul of souls: short of this there is *no object* given you.'[1] Objectivity here has a special meaning. It does not mean what is outside of men but it means what is ultimately real, what is basic to all that is, in popular language, what makes the world go round. It means that values are inextricably bound up with the world of existence. They are a wider life in which we share, in which all things share. That values should perish and facts go on, that values have no relation to facts is inconceivable. The thought of such a situation is on a par with an intellectual contradiction. To a true idealism 'values are an intense vision of the foundations on which the universe is built.' Values as we know them in the life of man are the universe become conscious, reality as it knows itself. A few references from some arch-idealists will serve to substantiate this as the idealistic position. The vital contention of Bradley's *Appearance and Reality* is the positive doctrine that reality is revealed in the system of its appearances and that the standards of better and higher which we apply are themselves based on the nature of reality and dictated by it.[2] Bosanquet says: 'The Absolute is not merely an intellectually coherent whole; it is perfect in every respect. We must believe that reality satisfies our whole being. Our main wants—for truth and life and for beauty and goodness must all find satisfaction.'[3] And again: 'Love, beauty, truth, in these our unity is solid and plain—our unity with God and with the whole of being.'[4] Or we may choose the words of Seth Pringle-Pattison: 'One thing is plain. The standard or principle of value must be found in the nature of the system as a whole. Judgements of value, in other words, are not to be taken, like the intuitions of an older philosophy, as so many detached and mutually independent pronouncements of one faculty or

[1] Martineau, *Study of Religion*, Vol. I, p. 13.
[2] Bradley, *Appearance and Reality*, p. 551.
[3] Bosanquet, *Principle of Individuality and Value*, p. 268.
[4] Bosanquet, *What Religion Is*, p. 28.

another upon particular features or aspects of the world. They represent rather so many parts of one fundamental judgement in which the nature of reality, as exhibited in the system, may be said to affirm itself. Every particular judgement depends for its ultimate sanction on the recognition of its object as a contributory element to this inclusive whole.'[1]

From this brief account of the general nature of reality as seen through idealism it might seem as though the idealist merely states a thesis without sufficient basis for what he claims. In defence we may say that every philosophy begins with some hypothesis regarded as basic and our criticism must be based not on the fact that it is an hypothesis but on its adequacy to explain the facts of experience. Since any philosophy must adopt some first principle the value of the philosophy will depend on the extent to which this principle accounts for all of life. However, there is some argument to substantiate the general position of idealism. This is the argument from the rationality of the Real. If this is doubted we are reduced to complete scepticism, and since this is impossible except for the totally dumb, we must if we are to philosophize at all maintain that reality is intelligible. Thus the hypothesis of idealism is one which you cannot deny without assuming. Further, intelligibility depends on the absolute judgement of value. For how could we argue, how could we convince ourselves of the truth of anything, unless Reality affirmed through us its inmost nature? Similarly how could we feel the urge of goodness and the appeal of beauty except we recognized them as more than finite, as the fundamental reality seeking expression through us? It must be admitted that we do feel the unrivalled urge and appeal of these values. Should we cast that aside and fall in line with the sceptics who mistrust any experience? Or do we take it for what it is worth and seek for it a place in a rational scheme of the universe? Idealism prefers to trust experience and test its worth. It is within the scope of this paper particularly to examine its trust and test of the religious experience. The question is: does idealism justify the convictions of the religious man?

To answer we must ask first what religious convictions are. A man might be convinced that angels exist, that they are able to dance on the point of a needle, or that hell is a burning pot of fire, but are these essentially religious convictions? Such beliefs have often been considered essentially religious; still a very irreligious man might hold to them tenaciously. The religious man's account of his experience is often overlaid with accretions and survivals of custom and belief. Superstitions often continue with their roots twined about our value consciousness. It is a sad fact, since it is the mixture of such beliefs which clash with our more scientific conclusions that has brought opprobrium upon the name of religion. To-day we cannot separate life into distinct compartments as Pascal did and find peace in the assertion that 'the heart has its reasons of which the reason knows nothing.' Religion does not arise as a protest against reason. It is faith which is contrasted *not* with knowledge but with sight. All the resources of knowledge may contribute to faith. But faith is contrasted with sight because it is essential to it that we rise into another world while remaining here. That other world is the world of value

[1] Seth Pringle-Pattison, *The Idea of God*, p. 223.

which has its roots not in a separate part of our nature, but issues from our reasonable life and is the informing principle of a coherent theory of reality.

This much seems then, to be clear, that it is not an unreasonable faith to which the religious man clings. It must be admitted that the task of establishing the validity of all religious beliefs is a hopeless one. Many are inconsistent with one another, and are, besides, inconsistent with knowledge which we possess. But the same is true of scientific beliefs and does not condemn religion as such. Both religion and science must submit to the acid test and admit that their postulates can only be valid when they are presented in a form which is consistent with the presuppositions on which the total body of experience rests. We can try to verify religious ideas by showing that they enter into harmonious relations with the other elements in the body of knowledge. They then share in the strength of a structure the parts of which mutually support one another. Failure to cohere, when it amounts to positive inconsistency is a sign of error.

But there is a sense in which we may speak of religious knowledge without meaning this or that particular belief. We may refer to the universal presuppositions of all religious experience. And then religious knowledge may mean belief in the supremacy of spirit. In religion a spiritual being is absorbed in or surrendered to a greater Spirit. Religion regards experience and treats things from the standpoint of value. To know, hold converse with, and enjoy the ultimate Good, is the chief end of spiritual endeavor. And it is the certainty associated with the reality of the Good, the positive belief in the objectivity of all values that constitutes religious knowledge. Love, beauty, truth, the eternal verity of these, is the truth on which religion stakes its all.

What, now, does idealism say of this certainty? Is the religious consciousness an adventure in a dreamy cuckoo-land, or is it justified in maintaining its beliefs? The latter is the truth of the matter. In fact it would seem that the religious man is always a true idealist though he does not know it, and the idealist is truly religious. Galloway makes the following statement: 'Idealism is the form of philosophical thinking which leads most readily to a philosophy of religion, inasmuch as mind or spirit is of primary value both for idealism and religion.'[1] We have noted the insistence of idealism on the objectivity of values and how impossible they would be to a self-contained finite entity. Framing an ideal and pursuing it means the presence of the infinite in the finite experience. The finite is recognized as existing only in and through the infinite. It is the nature of the infinite to express itself in the finite. The union of these two constitutes reality. Hence the ideal is precisely the most real thing in the world; and those ranges of our experience such as religion, which are specifically concerned with the ideal may be accepted as the best interpretations we have of the true nature of reality. Religious satisfactions means truth. It means unity with God, man, and nature. The religious spirit is one with the Spirit which is the whole and the Good. Religious knowledge is thus the knowledge of the ultimately real.

[1] Galloway, *Philosophy of Religion*, p. 44.

But there is one thing more which requires consideration. It is true according to idealism that religious knowledge is knowledge of the highest that *can be known* but it is not knowledge of the highest that there is. Religion as the pursuit of values construes its object as a Person, for only the personal life makes values real. Hence the validity of the postulate of a Divine Personality becomes a problem for the philosophy of religion. Idealists such as Bradley admit the necessity of belief in Divine Personality for the religious consciousness but in the scales of degree of truth and reality Personality is not ultimate. The final reality remains forever unknown for to know it one must be it, and then the finite self disappears. But religion which must be practical insists on the finite self. It is essentially a relational experience in which both parties of the relation are regarded as real. Sometimes in its more mystical tendencies religion seems to break away from the relational form and there is an experience of absorption in God, an experience in which only God is real. But there is another side which religion requires. It requires the assurance that God knows and is interested in the individual, that he sees the trials and triumphs of Jennie Smith who works daily for the support of her sick and aged mother. It is this element of individual reality which idealism cannot sanction as *the* truth. Nevertheless idealism assures us that it is not religion alone which is thus inadequate to approach the eternally real. Science, philosophy, all thought, every human experience must be touched with scepticism, for they are all vitiated by distinctions which cannot hold of the Absolute. The Infinite is a Beyond that the finite individual can never quite attain. What man can do is to approach the Infinite in a measure. He attains a degree of truth in his experiences and a higher degree in some than in others according as the experience is more inclusive and takes in more of the Infinite. And here we are reassured again of the high place of religion. For religion attains the highest degree possible. Let me quote from authorities. Bosanquet says, 'What a man's religion brings him, I should venture to suggest, let him hold to without scruple. It will be the nearest thing to truth that he can make his own.'[1] And Bradley expresses the same when he says, 'There is nothing more real than what comes in religion. To compare facts such as these with what comes to us in outward existence would be to trifle with the subject. The man who demands a reality more solid than that of the religious consciousness knows not what he seeks.'[2]

At first the conclusions of idealism seem harsh to the religious man but reflection shows them to be quite in accord with the religious consciousness. The religious man admits that he sees through a glass darkly, that all God's ways are not revealed to him. And idealism assures him that though his experience does not give him complete knowledge of things as they are, it is certainly valid as far as it goes. We are reminded of the Hebrew idea that one must cover his face to look upon God, for if he would see all he would perish, but looking through the veil he continues to exist and yet sees the best that can be seen.

[1] Bosanquet, *What Religion Is*, p. 29. [2] Bradley, *Appearance and Reality*, p. 449.

ANN ARBOR, MICHIGAN, U.S.A. ANGELYN STEVENS.

The Key to Scientific Etymology

Max Müller, the reputed father of the Science of Language, held the opinion that all the various languages of the world were derived from a number of common primitive roots. How these roots originally came into being he was not sure. They were there, those mysterious seeds from which the myriads of words spoken in every country and clime grew and multiplied. He did not attempt to solve the problem, but felt that a solution would come one day.

It may be that to some this view of the famous professor would seem extravagant. But I think it can well be assumed that even those of that way of thinking will not hesitate to subscribe to the proposition that at least the languages which are grouped, by common consent, into families—for instance, the Indo-European family—were derived from roots common to all the members of the family. Of course even this narrowing of the field, for the safer application of Max Müller's theory does not solve the problem of

The Origin of Roots

Their very identity is another obscure problem. For we know, as a matter of fact, that the so-called common roots were not found anywhere as such but it is the etymologists who have constructed them for us by an artificial process. Similar words from different languages of the family were compared together, their varying elements were laid aside and what appeared to be their crude unchanging bases were set down as their roots. It is the results of this process that are presented in standard etymological dictionaries such as Skeat's English Dictionary and Bopp's Comparative Lexicon, etc. These 'roots' take us some way indeed but not the whole way. For while the process itself cannot be qualified as strictly scientific, the necessarily haphazard manner in which the result is obtained opens a wide door for unending doubts. The greatest drawback, however, is that as these 'roots' are no more than abstractions without meaning, they furnish no rational basis for fixing the meaning of words in the student's memory.

Real roots, on the other hand, are words with an original sense of their own. This will be evident by giving a little thought to the subject. The words that are found in any language have not always been what they now are. They have been multiplying from a smaller stock of words and have acquired new forms and new meanings, during the course of ages. This is clearly seen by the fact that the vocabulary of every language falls into groups having inter-related forms and inter-related meanings, pointing to their having been differentiated from common word-types. And how has this come to pass? Early mankind had need of only a number of elementary ideas to be clothed in words at first, and as the need arose for giving expression to more complicated ideas, the existing words themselves were multiplied by differentiating them in various ways. Thus one expedient for

making a new word from an old one was to alter one or more of its sounds whereby the original idea-content of the former was differentiated into an analogous one. Another expedient was to link two or more words together so as to signify by the compound word a new idea connected with the idea-contents of the constituent members. The existence of polysyllabic words in most languages is due to this latter process. The signs of conjugation and inflexion too represent separate words that have more or less completely changed their form.

Thus it will be seen that the earliest words were composed of a minimum of sounds; in fact they were all monosyllables like the hypothetical 'roots' which etymologists have endeavoured to build up. But they are the genuine roots of language, each with a distinct idea-content, hanging together and revealing an inter-relationship due to the fact that their idea-contents are reducible to certain central ideas at the back of all thought. Roots are indeed word-types as elementary ideas are thought-types. Real roots are instinct with thought, their sound-vehicle itself corresponding, by a natural aptitude, to the particular idea conveyed.

Now, is it possible to recover the actual roots of any group of languages, that is to say, their earliest words embodying the most elementary ideas with which they began? The present writer is in a position to answer this question in the affirmative with respect to the Indo-European family of languages. It was by sheer accident that the key for disclosing the earliest forms of Indo-European words was acquired and that from an unsuspected quarter.

The remarkably symmetric formation of classical Tamil had led me to investigate its words in a scientific spirit and by diving deep into its ancient vocabulary, with the aid of its earliest known writings, I arrived at a handful of monosyllabic word-types on which all later Tamilian words (including Telugu, Malayalam and other dialects) were built up. An examination of the early forms of Sanskrit and other Indo-European vocabularies revealed the hitherto undreamt of fact that they too were built up in the same way, on the identical word-types and in accordance with definite phonetic laws.

After an account of this discovery had been given to the learned public in a vernacular work entitled: *How Tamil was Built up*, and a brief summary of it in English was submitted to the Royal Asiatic Society, C.B., for publication in its journal, a surprise was sprung on me by Dr. Waddell's Sumer-Aryan Dictionary which appeared subsequently. The surprise—a very agreeable one at that—was in the form of corroborative evidence from the pictographs of the Sumerian language. I shall presently show what that evidence consists in; but before doing so a few words on these peculiar writings will be of interest to the reader. The pictographs or picture writings are drawings of various objects for representing their names in script. All these names were monosyllabic words in the first instance. Thus the picture of a boring tool is drawn for recalling the word *bur* which means to cut through. Again *Er* is a word meaning a sling. This word is pictured by the sling itself. Other meanings were associated with these words later on. Thus, *bur*, to cut through, came also to mean a hole, the ear, to dig, to cultivate etc; *er*, a sling, developed the sense of hurry, to run against, seize,

bring, etc. Again Sumerian words did not always remain monosyllabic. In course of time words, each conveying a simple idea, were thrown together to connote composite ideas. The early pictographs too underwent various changes in their value, first becoming ideographs (that is to say, standing not for the original words but for others denoting analogous ideas), then becoming syllabic signs, and finally some of them letters of the alphabet. Notwithstanding all these transformations in ideas and forms, the Sumerian script has preserved for us a vast number of monosyllabic names of objects with their drawings in their primitive form.

The Evidence Furnished by the Pictographs

for decisively establishing the earliest word-types or roots of language is obtained in the following way: It is an established fact that the original sense of words in all languages had reference to material things in the first place. Immaterial or spiritual senses were always based on the material sense. In this, man has consistently followed the nature of his intellect which proceeds from the knowledge of the seen to that of the unseen. That man was first concerned with material things in the making of language in no way implies an inferiority of his intellectual powers in a primitive age. On the contrary, the naming of material things is itself an act involving all that is best in man's higher nature. For, every name (apart from proper names which are conventional and apart of course from imitative names) is a description of an object or action by its outstanding attribute or quality. To conceive quality as a universal idea and then to apply a quality to one thing in which it is discerned calls forth an intellectual act of the highest order. Now the name of every material thing is actually the name of its outstanding quality. And it is common knowledge that the names of material things are the first in language. We therefore arrive at the conclusion that the names of qualities are the earliest words in language. And the Sumerian monosyllabic names of pictured objects enable us to identify some of these earliest words or concepts of qualities enshrined in language.

Not that every Sumerian monosyllabic name is a primary word or root; but they furnish us with a safe clue to arriving at the real root. Thus, *bur*, to cut through, being represented by a boring tool, makes us see that the outstanding quality of the action referred to is 'forcing a way into' an object. But this idea is already a composite one. *Bur* indeed is only a secondary word. The primary word embodying the simple idea of 'inside' or 'within' is to be found in Tamil as *Uḷ*. This is the real root, composed of the demonstrative *U* which denotes remoteness or hiddenness ('being within an object') and the formative *L*, liable to be changed into *R* and the other linguals. Parallel to the Sumerian *bur*, Tamil has many secondary words derived from *Uḷ* such as *Pur-ai*, *Putt-u* both meaning a hole; *Pul* or *Piḷ* to cut through; *Pul-ua* 'borer' or worm; *Por-i* hole in the sense of the ear and the other organs. There is a large number of similar formations in all the Aryan languages. I subjoin only a few English derivatives: bore, brog, burin, burrow, per-forate, prick, ear, auricle, hear, boor, bury, etc.

On the other hand, we have a primary word in *er*, the second example above cited. The sense in Sumerian, however, is not the first one. Originally the word (from the demonstrative *E* 'above') expressed an upward movement or ascent, then sending up. From 'sending up', that which sends up a stone was named *er* or a sling. There are similar primary words in Tamil such as *Er-i* to throw up and *Eḻ-u* to rise, ascend. The final *i* and *u* in *Eri* and *Elu* are mere enunciatives as also are the *ai*, etc., in *Purai*, etc., of the first example. Such enunciatives are to be found in Sumerian too. There is a large variety of words derived from *Er* in Tamil as well as in all Indo-European languages. Some of the English forms are: hurry, urge, wreak, hurt, Harry, etc. The form *El* has a larger number of derivatives in Tamil, Sumerian and all the Aryan languages. The Tamil *El* means the sun as the 'Ris-er' in the heavens, light, day, etc. *El-il* is brightness, from the primary word. From secondary forms such as *Kel*, *Tel*, *Sol*, *Pol*, *Vel* and so on the number of derivatives is legion. All the words indeed which have had reference to the sun, its light and heat directly or metaphorically are from the root *El*. (A representative list of Aryan derivatives is included in my '*How Tamil was Built up*). In Sumerian itself we have from this root: *El* to shine, to rejoice; *Elamu* to rise, a hill; *Eru* the shining goddess; *Eussi* daylight, etc. In English east, orient (from the Latin), halo, Helios (from the Greek), Yule, hallow, holy, hill, Alp, Hera are a few of the many derivatives from the primary word *El*.

There is no doubt that by using the Tamil key alone the genuine roots of the Indo-European languages can be ascertained. This key discloses that ninety per cent of the Vedic Sanskrit vocabulary is from Tamil primary words. And what is of local interest, the Sinhalese language is shown to have been developed from the same roots, thirty per cent directly and seventy per cent through Sanskrit and Pali. The origin of Sumerian which is now said to be the parent of Sanskrit, Greek, Latin and English is itself scientifically explained by Tamil roots alone. It was hitherto believed that the Tamilian languages had no radical connexion with Aryan languages; but the key now found entirely reverses that belief.

A Comparative Tamil Lexicon

will make all this plain. It should deal with all the original words of the language and their chief ramifications, noting at the same time the principal Indo-European words which were directly or collaterally derived from them. The light thrown on the primary words by the Sumerian pictographs (as compared with the Egyptian hieroglyphs and the Babylonian cuneiforms) should be freely used. Such a comparative Lexicon will be admitted to confer an inestimable boon to students of oriental as well as European languages.

S. Gnana Prakasar.

Jaffna, Ceylon

Editorial Notes

Idealism and the College

This College continues to stand for a high type of idealism in education. We believe that it would be a great loss to education if this element were to be lost. Yet there are dangers in the present day which threaten it. The curriculum and the examination tend in many institutions to absorb all the interest and receive all the devotion of both the instructors and the instruction. It is not a danger that is peculiar to India alone, but one that is attendant on an age that emphasizes the matter of fact and the material. A great deal of stress is laid by our contemporaries on success, and success is most frequently judged by monetary standards. Many people gauge the worth of collegiate education largely by its bearing on the size of one's income. One's prospects are supposed to be *bettered* by passing examinations of a higher grade.

We have no need to underestimate the value of technical education, or the technical element in all education. Yet even the word 'technique' has suffered by the mechanical trend of the present age. We have come to associate it largely with skilful manipulation and execution. But the Greek word, *tekhnê* from which it is derived means art, and the ideal of art is beauty. We do a great injustice to the technical side of education if we lose sight of the ideal which is not simply correctness but beauty. Technique is a matter with which not only the scientist is concerned; it is also involved in artistic execution. Its ideal is more than geometrical; it is spiritual.

Another of the ideals of education is truth. The truly educated man is characterized by a burning passion for truth. Here also there exists a danger from an over-mechanical interpretation of the meaning of truth. The end of collegiate education, as it is practised in some communities is the accumulation of facts. Now a fact is that which is true. But it is a far cry to conclude that one who has accumulated a great many things that are true is thereby educated. We have sometimes encountered men who fairly bristle with facts about all sorts of conceivable subjects, men who can impart information on innumerable themes, and yet have none of that culture and refinement that mark an educated man. The aim of our College is not the production of animated encyclopaedias, but the development of men of clear thought, fine feeling and noble action.

It ought not to be so very difficult for those who have reached the collegiate stage in education to keep alive the sense of the ideal. It is conceivable that the village teacher who is trying to instruct unwilling urchins in the elements of writing and calculating may often forget that self-directing, self-conscious personality is the ideal end towards which he is making a beginning. The youth who is in college has come a considerable distance on the journey. He ought to have learned by this stage that what matters most is not algebra or logic or even the

mother-tongue, but himself. He ought to have learned that education does not mean an accretion of facts, be they never so scientific, but the unfolding of a life. No matter how efficient a system of education may be in vogue, there is danger that some will subordinate the ideal to meaner ends. We wish that every young man who enters this College would cling tenaciously to the ideal of becoming the very best of which he is capable. Let instruction be received in that spirit. Let subjects be mastered with that end in view. Let comradeships be chosen and friendship be given for mutual helpfulness. It is this spirit that is the *ésprit-de-corps* of the Madras Christian College. We are all here not alone to get the best instruction possible, but to give the best and the most that we can. India needs a host of sons embued with the spirit of Him 'who came not to be ministered unto but to minister, and to give his life a ransom for many.' No young man's education is complete who has not caught that spirit.

Idealism in education means working and living with the consciousness of our goal always before us. The idealist judges of the worth of a process not by its lowly beginnings, but by its most glorious possibilities. Those who aim at nothing beyond the attainment of the University's seal of approval in the form of an arts' degree will never bring much credit either on themselves or others. Those who aim to be the best they can and who regard their college course as incidental to their ideal will prove themselves the better men both here and hereafter. We are more than biological organisms ; we are spiritual beings. Nothing less than the complete predominance of the spirit in life is the goal of the education that commands our interest.

The Renunciation of War

It is significant that for the first time in history first-rate world powers have under discussion the possibility of renouncing war as a means for the settlement of international differences. Whatever may be the claims that are made for international law and policy, it is fairly apparent that for a long time the entire structure of international relationship has been resting on a war basis. The pursuasion of the diplomat has depended to a large extent on the force in whose name he speaks. The ability to negotiate favourable understandings is too often and too unduly influenced by military or naval power. Even peace itself has had a war basis, and nations have deluded themselves into thinking that the best way to preserve peace was to be armed to the teeth for war. At last the world is beginning to understand that armies and navies are not peace instruments. It used to be thought that they were built and maintained to meet the requirements of war ; now we begin to see that wars sooner or later have to be made to meet the requirements of military forces. Even international law has allowed militarism to grow and flourish under its benign ægis.

In the United States of America from whence has emanated the proposal that the greater powers form a compact to outlaw war, the lead has been taken by the Christian churches. It is perfectly obvious that war is unhuman, and diametrically opposed to the teaching of Jesus on human relationships. The present proposal is

in effect that Jesus must be taken more seriously, and effect given to his teaching in international policies. *The Christian Century*, a journal of progressive religious thought, has done splendid service in keeping this matter before the public conscience. It has pointed out that in the present state of international rivalry and jealousy there can be no such clear cut thing as a war of aggression. And even if there were, there is no practical device in existence by which the aggressor could be identified in order that he might be brought to book. Further, if he could be identified there is no machinery for dealing with him under the war system. Granted that it were possible to identify the aggressor and deal with him appropriately, you would be dealing with a war situation which has already passed beyond the control of peaceable forces. Thus the militaristic system has so encroached upon the structure of the modern state and upon inter-state relations that it all but dominates it.

What has been the net result of the domination of a political philosophy based on the doctrine of the survival of the fittest ? Has the armed state brought about greater security, or more immunity from the aggrandisements of other states ? The answer is, Nothing of the sort. The military function of the state has encroached upon economic life, and is the mainstay of a huge industry. But people are not going to continue making more and deadlier munitions without using them. International relations are shot through and through with rivalry that expresses itself in competitive armaments, alliances, ententes, balances of power, covenants and leagues. At times nations indulge through their diplomats in the most cordial expressions of friendship, while all the time their policies are governed by mutual distrust of one another. When proposals for outlawing war are made, our militaristic friends begin to ask how we propose to deal with aggressors and offenders. They tell us that there must be at least an international police which is the old thing back again in a fresh guise. They will do anything but honestly admit that the militaristic policy has been a failure, no matter what the angle from which it is viewed. It has fostered rivalry instead of security; it has induced war instead of guaranteeing peace. It has brought about colossal economic waste. Finally it has made trenches run red with the blood of our brothers, and worked irretrievable wrongs to the home, the state, and to the race.

The proposal is, Let us have done with war. Let us make peace the permanent basis for international relationships. Let us have laws based on peace. Let us put into operation the machinery of peace. The challenge is bold. It is a challenge to build up an international morality in which harshness, duplicity and injustice shall have no place. There is no reason why a group of nations such as the British Empire, the United States, Germany, France, Japan, Italy, China and Russia could not, if they were agreed construct a permanent peace basis for their mutual relationships. What would be the machinery for such a political structure ? Experiments will have to be made to devise the best. Certainly the nations could not do worse than to continue in their adherence to the existing war basis. The present challenge is to put brotherhood into international politics.

What Men Think

A Prayer for India

Where the mind is without fear and the head is held high;
Where knowledge is free;
Where the world has not been broken up into fragments by narrow
domestic walls;
Where words come out from the depth of truth;
Where tireless striving stretches its arms towards perfection;
Where the clear stream of reason has not lost its way into the
dreary desert sand of dead habit;
Where the mind is led forward by thee into ever-widening thought
and action—
Into that heaven of freedom, my Father, let my country awake.

RABINDRANATH TAGORE.

Religion and Beauty

The weight of human experience seems to show that religion is an incurable necessity. Many times people have become discontented with the form of religion that was prevalent, and have at first blush interpreted their discontent as with religion itself. They have thought to get along without religion, discarding its familiar forms. But when deprived of it they have experienced a sense of lack and need, making them conscious that religion served them in some intangible way which they had failed to realize. The truth is that religion does something for us that we need to have done, and that we cannot get done in any other way. When we try to put that experience into definition or description, we find it amazingly difficult. The bewildering varieties of attempts to define the differentiating characteristic is best evidence of the difficult nature of the problem.

In the March issue of *Harper's Magazine* Avis D. Carlson makes another attempt to locate the element in religion that makes it a vital necessity. The article is especially interesting as a human document, a record of the writer's own experience. Conventional religion had lost its grip. Neither the institution nor the sacred scripture spoke with the voice of supernatural authority. The intellectual aspect, the dogma did not seem to be the essential thing. Tradition, dogma, and morality all appeared to be aspects of religion, and yet none of them seemed to be the real thing. Nor did all of them together constitute the real thing. The author found little satisfaction from the statement made so frequently that in religion we are dealing with the imponderable, and therefore should not expect to understand it. Dissatisfaction with traditional religion and discarding the church

brought no rest, and the sense of need deepened. This sense of need was much akin to what Professor Whitehead describes in his *Religion in the Making* a sense of solitariness.

While in this state of mental perturbation two things happened which conspired to restore rest. The first was the discovery of symphony orchestras; the other was contact with a scholar who asserted and was able to carry conviction when he asserted that spiritual realities exist. The article deals in the main with the effect of the first experience. Under the stimulus of a great musical performance the emotional response is precisely similar to one arising from a religious impulse. One is fairly swept away from this world into the seventh heaven. It is an experience which many others have had, though it came as a startling discovery to the author. Many aesthetically minded souls have had similar emotional experiences when beholding a beautiful landscape or a great painting. Others have been thrilled in a similar way by great drama. Miss Puffer in her book on *The Psychology of Beauty* has described this response as mysticism. The feeling of the artist and the religious person are alike in that they both feel at one with the object of their adoration. In the present article Carlson quotes from a number of books on Aesthetics and The Philosophy of Religion to show that almost equivalent language is used to describe the aesthetic and religious experiences. The inference seems to be that they are identical.

We must cordially recognize the mutual debts of religion and art to one another. We may also freely acknowledge that there is in all our human experiences an inter-penetration of values. Nevertheless, Art is much more narrowly concerned with Beauty than with Truth or Goodness, while Religion is in a sense the synthesis of the three. It is perfectly true that Art unlocks for us some of the rich treasures of the universe, and moves us to nobler living. But, however much we may admire and enjoy beauty, as Hegel long ago reminded us, we do not worship a work of art. Worship is that activity of the religious consciousness that makes it transcend every other human activity.

Psychology and the Unconscious

The last few years we have witnessed an increasing use of the term, 'the unconscious' in psychology. It has developed partially as an extension of James' idea of a subconscious or subliminal consciousness. But it is to psychoanalysis more than to any other movement that we owe the increasing vogue of the term. It is used by Jung, to take one example, as 'a psychological boundary concept which covers all those psychic contents or processes which are not conscious, i.e. not related to the ego in a perceptible way.' It is perfectly obvious that there are some mental processes such as certain motives which operate through our attitudes and prejudices, of which we are often unaware. In the sense in which Jung has defined it, no scientific psychologist would have any quarrel. On the other hand it cannot be denied that some of the more radical among the psychoanalysts have used the unconscious as a sort of dumping-ground for all sorts of vagaries and phenomena which they were unable to explain in any other way. The question is as to whether the concept is a necessary one, and one that has come to stay in psychology.

An important critique of the concept of the unconscious has recently come from Dr. A. Campbell Garnett of the University of Adelaide in a work entitled *Instinct and Personality*. It is his judgement, a judgement in which many psychologists will concur, that the psychoanalysts have almost exclusively begun at the wrong place. They have made a beginning by observing abnormal phenomena such as dissociation, terror-dreams, hallucinations, multiple personality, etc., and have attempted to construct a theory on the basis of such facts. Now, of course, there is no denying the facts of these abnormal experiences, and the analysts have had unusual opportunity for studying them, because many of them are practicing physicians to whom neurotics of all kinds come for advice. Further than that, they have been successful in many cases in their attempts to help such folks, though it must be admitted that their failures are not as well advertized. Dr. Garnett's criticism is not of psycho-analytic practice, but with the theoretical interpretation which they have offered. This needs to be made clear. They have begun at the wrong place. The corrective which he offers is to begin with the normal, positive experiences of the mental life. Explain the abnormal from the normal, and not the reverse.

The human mind is a unit, conscious, active and teleological. The facts of dissociation and multiple personality seem at first sight to suggest a disintegration between the conscious and the unconscious. But Garnett does not believe that such an explanation is sound. Not only the abnormalities of dissociation but also the normal experiences of association can best be understood from the view-point of interested attention. Why is it that certain experiences of the past get shut out of consciousness, so that we normally never think of them, and yet they have a disagreeable habit of bobbing up in our dreams or when conscious control is not being exercised? The analysts would say that there is a censorship operative in waking consciousness which is removed during sleep. Garnett says that it is not the pleasantness or unpleasantness of a fact that makes us tend to forget it. But the dominant interests of the personality simply shut out of consciousness all the contrary elements. In sleep or neurotic conditions the interests of the conscious life cease to dominate, and attention wavers to other matters. The normal tendency is for an idea of an action or physiological process to realize itself unless it has heen negatived before attention passes from it. It merely goes on automatically until attention returns to it and negatives it. This automatic and unconscious process needs no hypothetical unconscious mind to explain it. It can be accounted for as a physiological continuation of a neural process initiated by expectant attention and then dissociated. His conclusion is that the entire range of phenomena that are ordinarily taken by the psychoanalyst as evidence of the existence of an unconscious mind are explicable without resorting to that hypothesis. Consciousness must be considered as unitary—not piece-meal. These phenomena are the results of suggestion, i.e., of a conscious process. When attention has been withdrawn because other interests dominate the mind, processes that have not been definitely inhibited tend to go on automatically. The only sense in which we should retain the concept of an unconscious is physiological, not psychological.

World Weather

It is now fifty years since meteorologists began to recognize that for forecasting the weather of a country it is necessary to have data from a very much wider area. The far-reaching character of the subject was first visualized by Hildebrandsson, who in 1897 published the pressure data for ten years of sixty-eight stations scattered over the world, and directed attention to certain relations between them as indicated by plotted curves. Of these the see-saw of pressure in the Argentine and in India was one of the most striking. More recently, instead of using graphical representation, statistical methods have been employed and tables of relationships between conditions of pressure, temperature, rain or river-flood at thirty-two centres throughout the world have been drawn up and the correlation-coefficients have been worked out for each quarter with those of contemporary quarters of the other stations and also with those of one quarter and with those of two quarters before and after. Sir Gilbert Walker, until recently Director General of Observatories in India, in his presidential address to the Royal Meteorological Society gave a summary of some of the results of this work (*Nature*, May 25th.) The main conclusion reached is that there are three big swayings or surgings : (*a*) the North Atlantic oscillation of pressure between the Azores or Vienna on the one hand and Iceland or Greenland on the other ; (*b*) the North Pacific oscillation between the high pressure belt and the winter depression near the Aleutian Islands ; and (*c*) the Southern oscillation mainly between the South Pacific and the land areas round the Indian Ocean. The Southern oscillation is much more far-reaching than the others and its effects take six months or more to be propagated across the area. A study of data for the past thirty-five years has shown that there is a very close correlation (positive or negative) between the following factors : (1) Nile floods of July—October, (2) temperature at Samoa during the following summer, December—February, (3) the same during autumn, March—May, (4) pressure at Port Darwin (North Australia) for September—November, six months before No. 3. (5) pressure at Zanzibar during December—February subsequent to No. 4. Another set of relationships are pressure at Honolulu, Samoa, the Argentine and Chile, Indian monsoon rain-fall and the Nile floods, all of which have a positive correlation, and pressure at Port Darwin and temperatures at Batavia and Samoa which tend to vary together but have a negative correlation with the first group for the same season, June—August. Many attempts have been made to understand the mechanism of such relationships and to find the controlling or initiating factor but with incomplete success. The agents thought to have an important influence are sun-spot activity and the conditions of polar ice in the Antarctic, but in spite of many correspondencies, there is much data that does not fit in with these theories. Although the theoretical aspect remains obscure, the practical application of these found relationships is likely to prove very useful in forecasting. Dr. Walker during his address showed a chart in which his forecasts for nineteen years, based on correlation-coefficients, and the actuals were compared. The large measure of agreement showed the value of the method.

Artificial Diamonds

Towards the end of last century, Moissan, in the course of his extensive researches with the electric furnace, claimed to have prepared diamonds artificially. His method was to dissolve carbon in liquid cast-iron which was then suddenly chilled externally so as to cause the outside of the mass to solidify while internally it was still liquid. Iron, like water, expands on solidifying and so the liquid core would be subjected to increasingly high pressure. It was thought that as the diamond is the densest and hardest form of carbon, it would be formed when carbon separated from solution under high pressure. After treatment with acids and oxidizing agents to dissolve iron and remove other forms of carbon, from a very large quantity of iron a few very small crystals were obtained which were very hard, had a high refractive index, belonged to the regular system of symmetry and gave CO_2 on heating in oxygen, and so were taken for diamonds. Sir W. Crookes also claimed to have found minute diamonds in the residue obtained by exploding cordite in a closed vessel whereby carbon had been exposed to a very high pressure and temperature. In 1908, Sir R. Threlfall heated graphite to a very high temperature under a pressure of 15,000 atmospheres but his products were quite soft and showed no signs of a change of phase. Other chemists have also expressed doubt as to the successful production of diamond from other forms of carbon, and Prof. H. E. Armstrong has even denied that amorphous carbon and graphite are really elementary carbon, these substances having never been obtained quite pure and free from hydrogen. A few years ago, Sir Charles Parsons and Mr. H. M. Duncan undertook a thorough examination of the subject and their conclusions are summarized in *Nature* of May 19th. They conclude that there is no evidence that diamond has ever been obtained artificially, that carbon does not crystallize as diamond at high temperature and pressure, and that Moissan's experiment does not even produce a very high pressure. They found that the purer the iron used the fewer the crystals obtained and that several other methods claimed to give diamonds give entirely negative results. By carefully examining the method of separation and analysis in the case of Moissan's experiment, they have shown that a number of crystalline silicates are much more resistant to the action of the acids used than was previously thought, and that the crystals supposed to be diamonds are probably spinel (a double silicate of aluminium and magnesium). This substance crystallizes in the regular system and has a high refractive index. The CO_2 obtained on heating in oxygen was probably due to traces of carbon dust.

Artificial Sunlight in the Home

In 1893 Finsen published his first paper on the use of ultra-violet light as a curative agent in the treatment of lupus. As a result of his success much experimentation in actinotherapy has been carried out since that time and it has been found that a number of other diseased conditions are benefited by the action of this type of radiation. One of the most striking successes has been that of Bernard and Rollier in Switzerland in the cure of extra-pulmonary tuberculosis by the regulated action of the sun's rays. On the whole, little interest has been shown in this subject

in Great Britain until the last few years. Recently, largely owing to the remarkable discovery that vitamin D is produced by the action of ultra-violet light on ergosterol, great public interest has been aroused in light-treatment. Many makers of scientific and medical instruments have brought out small and reasonably safe ultra-violet lamps and 'artificial sunlight in the home' has become one of the latest crazes. In a special supplement to *Nature* of April 21st. there is a series of articles on 'Actino-Therapy in the Home' in which various aspects of the subject are dealt with.

The kind of light found to be most effective therapeutically is the middle ultra-violet (wave-length 2,900–3,000 A). Rays of shorter wave-length, powerful in killing microbes, fail to penetrate the horny outer layer of the epidermis and so have little or no action on the skin. The longer ultra-violet rays, like the visible rays, reach the blood in the capillaries of the derma and are converted into heat without producing other results. The middle ultra-violet rays are absorbed by the living cells of the epidermis, among which are found the nerve-endings, and exert their influence there.

The first effect of exposure to ultra-violet light is the production of erythema or inflammation of the skin. The inflammatory reaction increases the power of the blood to kill staphylococci as tested *in vitro* and helps the skin to recover from infections such as lupus and surgical tuberculosis. It also causes the formation of vitamin D and increases the mineral metabolism, increasing the absorption of calcium, phosphorus, iron and iodine by the body. However, the details of the processes occurring as the result of ultra-violet light absorption remain obscure.

Light of the active kind is most easily produced artificially by the mercury vapour lamp and by various modifications of the carbon arc. The mercury arc lamp needs to be made of fused silica, most kinds of glass being opaque to ultra-violet light. The radiation from the carbon arc is improved by making the flame long, by using carbons with metallic cores and by impregnating the carbon with various substances such as the fluorides of the rare earths and compounds of iron. The lamps sold for producing artificial sunlight are of one or other of these types. Both kinds give rays richer than sunlight in ultra-violet radiation.

The length of time of exposure in radiant baths is very important, 10 to 30 minutes 2 or 3 times a week being the safe amount with most lamps. Excessive exposure may have very serious results and several of the lamps designed for use in the home have automatic devices for switching off the current after a certain time or are arranged so that the one receiving treatment must be standing and thus less likely to fall asleep during treatment than if reclining on a bed. It is also quite necessary to protect the eyes with goggles. The installation of lamps in bathrooms must be avoided as the high current necessary to run the lamps and the wet surfaces always present make the danger from shock very great.

Ultra-violet light treatment is beneficial not only to man living under artificial conditions but also to animals. It improves egg-laying and hatching in chickens and milk-production in cows. Exposure of the body to cold air is frequently associated with radiant treatment and it is believed that part of the benefit is due to the effect of the cool fresh air on the skin.

The Quantum Postulate and Atomic Theory

A lecture by Niels Bohr in *Nature*, April 14th, 1928, reviews the development of the quantum theory since his lecture on 'Atomic Theory and Mechanics' published in 1925, when the new developments were only just beginning. During the intervening two and a half years a large number of papers on the subject have been published in German, in French, in English and in Italian, approaching the subject from such widely different standpoints as the matrix mechanics which depends on non-commutative algebras, and the wave-mechanics which represents atoms by wave systems. Remarkable success has been attained in correlating methods which seemed to have nothing in common, but all has seemed to the layman a mass of meaningless symbols or of words and phrases that are but little less than meaningless. To Bohr, whose papers fifteen years ago began a new epoch for the quantum theory, we still look for a comprehension of the whole theory and a statement of its trend. In the new quantum theory any attempt to observe the position or the motion of an electron involves illumination by light and interaction with the light. Any observation of an atom involves an emission of energy from the atom and thus there can never be a sequence of observations on an atom in a steady state, for in any observation its state is changed. The position and path of an electron become vague. This is perhaps the first time that there has appeared in physical science the idea that no observation can give precise information about what would have been the condition of the observed object had it not been observed.

The Wider Aspects of Cosmogony

A lecture by Dr J. N. Jeans with this title gives in a supplement to *Nature*, March 24th 1928, an impressive story of the results of astronomical research to which he has himself contributed so conspicuously. It is an awe-inspiring picture of the world's immensity. Geological evidence shows that the total age of the earth is about two thousand million years, enormously longer than the period of man's existence and yet the life in front of the earth will in all probability be far greater than its past life, for, a million years hence, so far as we can foresee, the sun will still be much as now, the earth revolving round it still receiving radiation from it. It seems likely that the future life of the human race may be at least three million times its past life. For mass is convertible into energy and the sun's mass is sufficient for it to go on radiating energy at its present rate, and losing mass at the rate of 250,000,000 tons a minute, for millions of millions of years. Looked at on the astronomical time-scale, humanity is at the very beginning of its existence. If we represent the past age of the earth by a period of seventy years, then on the same scale humanity itself is only three days old, and only in the last few minutes has it become conscious that its earth is not the centre of the universe, and only in the last few seconds had any adequate conception of the size of the external world. A wireless signal travels round the earth in a seventh of a second; light would probably take a hundred thousand million years to travel round the universe: since wireless signals and light are of the same kind and have the same speed the ratio of these times measures the expansion of our spatial ideas since Copernicus, who first saw that the earth is not the centre of the universe.

In the cluster of stars of which the sun is one, probably about a thousand million in number, there is an enormous variety of big and little stars, of bright and faint stars, of red and blue stars, of hot, hotter and still hotter stars. The faintest of *known* stars emits only a fifty thousandth of the light of the sun, the brightest 300,000 times the light of the sun. The smallest known star is about the size of the earth, less than a millionth of the size of the sun (Van Maanen's star; the companion of Sirius) and it has a density about 3,000 times that of the heaviest solid on earth; the largest known star (Betelgeuse) is over 25 million times the size of the sun and has a density about a thousandth that of air.

This whole cluster is itself but one of the many that are seen as spiral nebulæ throughout the sky. These nebulae start as masses of rotating gas, and, by cooling and contraction, centres of condensations occur which become stars. Nebulæ in every stage of evolution from an inchoate mass of gas to a cloud of stars have been photographed. Each nebula is probably roughly about the size of this cluster of which the sun and all our familiar stars and the whole Milky Way form part. It is estimated that about two million such nebulae are visible in the 100 inch telescope at Mount Wilson, and, on the relativity theory, that the whole universe has about a thousand million times the volume of the part of space visible in that telescope.

No star can have a system of planets such as that which surrounds our sun and includes the earth unless it has had a very near approach to some other star. Such near approaches are so rare that even after their lives of millions of millions of years only about one star in a hundred thousand can have planets. Only on planets, so far as we know, can life exist. It does not look at present as though Nature had designed the universe primarily for life; the normal star and the normal nebulae have nothing to do with life except making it impossible. Life seems to be the accident, and torrential deluges of life-destroying radiation the essential. There may be about ten thousand planetary systems in our own, star-cluster; they come into existence at an average rate of about one per thousand million years. So that there are very few planetary systems of so recent creation as our own, and there are probably thousands which are hundreds or thousands of times as old. But our three-days-old humanity cannot be very confident of any interpretation it puts on a universe which it only discovered a minute or two ago.

Book Reviews

Rationalism and Orthodoxy of To-day. By J. H. Beibitz, M. A. London: Student Christian Movement, 1927. Pp. 191. 5*s.*

This is an essay in the philosophy of the Christian religion which attempts to describe religion in the language of biology. The author believes that biological science is best adapted to explain the whole gamut of human reactions to the environment from that of the unicellular structure to the spiritual experiences of the Christian. That being the case a great deal of the book is devoted to the discussion of biological views and their bearing on Christian doctrine. In particular Mr. Julian Huxley comes in for a great deal of critical examination, because the author believes that the data which Huxley uses leads to results other than those which the biologist accepts.

There are certain outstanding facts which biological science has disclosed, and which to the philosopher of religion are important. First, there is the impression that the universe is orderly and shows evidence of rationality. The universe is a cosmos, and not a chaos. Secondly, our observations of cosmic processes leads us to see development with life in its higher reaches, i.e., mental life increasingly in control. Thirdly, certain animals, notably man, have evolved a sense of appreciation of values, of goodness, truth and beauty. Finally these values being the best that we know, and having developed at the end of the process so far, we may conclude that they are the logical terminus of biological evolution. Religious experience is, thus, the highest stage in biological evolution, and is integral to the whole cosmic order. Such a view rationalizes it, while at the same time it recognizes its transcendence.

One of the main points at which the author takes issue with Mr. Huxley is in regard to whether God is or is not a person. Mr. Huxley says that he can find no reason why he should conclude that God is a person. He has considered the idea of God as it has arisen historically, and seems to think that personality is simply one of the attributes which man came to attribute to God. But the Absolute is above this human concept. He is the ordering, directive force of the universe. Such is the scientific view, according to Huxley. Mr. Beibitz is of the opinion that Huxley's conclusion is due to his contact with some of the more crude notions in respect to personality, as a consequence of which he has misunderstood the Christian view. If one follows out the evolutionary development to which reference has already been made, a development which of course Huxley accepts, it places the evolution of values at the summit of the ascent. It is in association with our sense of values that we must understand the Christian practice of attributing personality to God. In view of the fact that the soul of religion is communion with God, we conclude also that personality must be attributed to him. When the author argues

from the same bases that we must go on to a Trinitarian view of God, he is not so happy.

Certainly Mr. Beibitz is right in arguing that the view which attributes personality to God does more justice to the facts of life and experience than the opposite view. A mechanistic view of the universe has no standing whatever among critical philosophers, and we suspect that it has much less vogue among scientists than some have supposed. Altogether the essay before us is a suggestive contribution to a philosophical interpretation of Christianity.

A. S. W.

The Religious Attitude. A Psychological Study of its Differentiation. By A. S. Woodburne. New York: Macmillan, 1927, Pp. 353. Rs 7. Obtainable at the Christian Literature Society, Madras.

Every one whose interest is both in the historical development of religion and in the truth of religion is deeply concerned and constantly occupied with questions that the author discusses in this volume. To an old theme he brings a fresh and penetrating discussion, and we have a serious and able attempt to face the problem of the differentiation of religion from other closely allied experiences. He is able to add an illuminating discussion in a field already full of treatises. The religious attitude is defined as the social attitude towards the extra-human environment, the term 'social meaning relation toward another. The problem is approached from the historico-psychological point of view, and the author brings to the study a keen psychological analysis, a wide knowledge of the history of religions and of thought, and what is more important, a spiritual insight. The relation of religion to magic, science, art and morality is discussed in separate chapters. The critical survey of the important theories in each field is able and clear. Such a survey can be tedious, but this one is not. The exposition is objective, sympathetic with the various points of view, probing with great skill for the central nerves of every theory examined yet preserving enough of individual lights and shades to avoid anything unpleasantly dissecting in appearance. The related attitudes are not disparaged in the interests of religion but the place of each in the whole of life is rightly conserved. The author adduces a large amount of evidence in support of his thesis that the life of primitive peoples is an undifferentiated continuum, and that from this matrix the various attitudes known as the magical scientific, aesthetic, moral and religious have differentiated themselves with the growth of reflection. Thus no attempt is made to derive one from the other as many scholars have done. Magic and religion have sprung from a common substratum where differentiation is impossible. Science does not bring about the disintegration of religion but of magic, and the religious attitude in contrast with the scientific is concerned with life in its integrity and has a cosmic significance. The function of art is to reveal spiritual values discovered in religious experience. Morality and religion have sprung from the common matrix of social consciousness, but the latter is the crown of the former, that which supplies motive-power and criterion for moral judgement The pragmatic reason for bringing the two into association is inescapable.

The religious attitude is the highest reach of the human consciousness and is the habitual disposition to seize upon the spiritual elements in the environment, the effort to organize and conserve them in the interests of the larger life. It is an attitude of faith rather than of proof. 'We can learn that there is a power, not ourselves, with whom we can commune and who is a guarantor of our values only by the venture of faith.' Evaluational creative and adventurous, its great value category is God. The Deity stands for the kind of spiritual values which man has understood and appreciated. The idea of God is philosophically necessary and religiously satisfying; the conception makes the universe more intelligible and our knowledge of it more coherent.

The book is alive, filled with the fruits of rich study and enriched with fresh illustrations from Indian religions. It is full of information where sources are many. The style is lucid, fluent and vigorous. A high level of interest is sustained to the end. The author appears as a democrat of evident spiritual distinction, combined with a keenly critical insight and judgement. Students of the philosophy of religion will appreciate this contribution to the difficult problem of the differentiation of religion. It is at the same time a valuable scientific apologetic for religion. We welcome this stimulating book. May it lead the reader to a new experience of spiritual values through faith which, as the author says, is the completion of knowledge, giving meaning and value to life.

S. J. T.

Israel Among the Nations. By Roman H. Baynes. London: Student Christian Movement, 1928. Oblainable in India from the Association Press, Calcutta.

'This book,' writes the author in a very modest preface, 'can lay no claim either to originality or to scholarship; its object is to give to the general reader a sketch of the history of Israel which may serve as a background for his study of the Old Testament.' This object has been very successfully realized. With the skill of a trained historian and a practised writer, Mr. Baynes guides the reader through the darkness which enshrouds the origins of Israel and her early history up to the establishment of the kingship, and then through all the intricacies of war and treaty, conquest and defeat, aggression and submission which make up the externals of her history. The story begins with Abraham and ends with the close of the greater period, and the main outlines of the story are well set forth. The nation, united in opposition to tyranny, sallying forth from Egypt, the struggle for a foothold in Canaan, revived unity in opposition to Philistia, the succession of the northern kingdom and her fall, the Assyrian menace, the Babylonian domination, the salvation through Persia and the re-establishment of a priest-ruled theocracy, the bitter resistance to the aggressive Hellenism of Antiochus Epiphanes and the final triumph of the old tradition,—all this wonderful story is sketched out by a firm and decisive hand. It is not easy to write such a story in a manner at once detailed and attractive. The choice might seem to be between the writing of a bare dogmatic outline or of many volumes. Mr. Baynes has chosen a middle course. His actual text is brief and pointed, and has all the advantages of brevity. We

see the story as a whole, and are struck once more by the wonder of it, and the romance of it, and the divine unexpectedness of it. But Mr. Baynes saves himself from the undue dogmatism which is almost inseparable from such a method by consigning his doubts and subsiding discussion to notes at the end of the volume. These notes occupy almost half of the volume, and contain references to an exceedingly wide range of authorities, supplemented by a very adequate bibliography. The book, therefore, not only is an attractive sketch of the history of Israel till the beginning of the Christian era, but also gives the key to a further and more detailed study of any particular period. It is at once a readable summary and a most serviceable book of reference and can be safely recommended to any who wish to deepen their understanding not only of the historical but also of the prophetic, apocalyptic, and wisdom literature of the Old Testament.

A. J. B.

The World-wide Call. By H. P. Thomson. London: Student Christian Movement, 1928. Obtainable in India from Association Press, Calcutta, 4*s.*

Mr. Thomson has been entrusted with the task of setting forth in book form the substance of the five 'World Call' Reports which were recently presented to the Church of England by its missionary council. He does his work most attractively. The main theme of his book—the increasing one-ness of the world and the consequent contacts between different civilizations and cultures—is not a new one, but he has succeeded in imparting freshness and vitality to his discussion and illustration of it. He writes of Japan, China, India, the Moslem world, and Africa, and of British people overseas, and his discussions, though necessarily slight, are always illuminating. His book will interest missionaries who can spare a few hours from the details to take a panoramic view. And it might interest many Indians—both Christians and non-Christians—as giving an Englishman's view of missionary ideals and duties, intended to be read by his own countrymen, and therefore free from any suspicion of insincerity.

A. J. B.

How We Learn. By W. H. Kilpatrick, PH.D., LL.D. Calcutta: The Association Press, 1928. Pp. 100. Re 1.

This little book is an exposition of the psychological basis of the project method in education, which the author gave at an educational conference in Vellore in December, 1926. It was reported stenographically by Dr. Mason Olcott, and submitted to Dr. Kilpatrick who revised the notes and gave his permission for their publication. The form is very simple and the presentation unusually clear, so that it should serve a useful purpose in meeting the needs of teachers whose academic qualifications are meagre. We need more books of this type for such teachers to whom the more advanced literature is practically sealed.

The value of the present volume is two-fold. It is a useful exposition of the project method with which the name of the learned author is associated so closely.

Since it discusses the method from the point of view of its psychological basis, it makes clear how purposeful projects are used for educational development in the learning process. It further shows the relationship between pupil projects and teacher guidance. The outstanding merit of the method is that the entire educational process is shot through with purposive activity, not the purposes of other people, be they never so proficient, but purposes self-initiated and self-determined. It makes the school a vital part of life instead of merely a place of so-called preparation for life.

The second value of the book is that it present an unusually lucid account of the psychology of learning. The standpoint is that of the stimulus-response psychology with which Madras students have become familiar through the writings of Woodworth and Thorndike, both colleagues of Kilpatrick in Columbia University. Learning consists in acquiring a certain type of response appropriate to a situation. It is facilitated by satisfaction, and hindered by annoyance. Such satisfactions and annoyances are related to the mind-set or purposes of the subject. Hence the need of teachers working through the purposeful activities of children. That does not mean that the project method proposes to make all learning easy. The truth is learning best takes place when difficulties are presented and thinking is necessary to meet a situation. Life is largely composed of such problem situations, and education is successful when it enables children to meet them with the spirit of learners.

A. S. W.

Fourteen Experiments in Rural Education, described by various writers, and edited by Miss A. B. Van Doren. Calcutta: The Association Press, 1928. Pp. xv + 127. Re 1-8.

This book is presented by the National Christian Council as a sequel to *Village Education in India*, published in 1920 by the commission which investigated that field, and *Schools with a Message*, by Dr. D. J. Fleming, published in 1921. The fourteen experiments herein described owe their inspiration to the work of the commission, and the desire to put into practice some of the newer methods in education. The editor emphasizes the word 'experiment.' All of the schools described may be so described, and yet they have yielded a sufficient fruitage to be worthy of this description for the sake of others who are conscious of similar problems and needs.

The most obvious problem that has given rise to these experiments may be described as vocational. It has arisen out of the conviction that a good deal of the existing village education fails to meet the felt needs of the community. It does not prepare children to do the sorts of things they will require to do in later life. Education is for life, and education of village children must be for village life, if it is to be appropriate. Several of the schools described in the book have attempted to meet the need by making use of the project method. The experiment at Moga, Punjab is familiar. Children learn to build houses, make furniture, weave clothes, etc. In association with each chosen project the school subjects are taught. They

have to learn about the materials used, whence and how they come, and so forth. They have to make every calculation for which the project calls. Several schools run on lines somewhat similar to that at Moga give testimony to the utility of the method, and report that the children learn all the subjects of the curriculum, and usually learn them quicker and better than by the older method.

All of the descriptions in the book are necessarily brief. On that account it would be folly to try to condense them still further for review. We urge all those interested in village education to read the book. It is full of absorbing interest and helpful suggestions.

A. S. W.

The Path of the Elders. By Ernest Erle Power. Adyar: Theosophical Publishing House, 1928. Pp. xx + 230.

This volume is intended, the author informs us, as an exposition of the ancient Buddhist faith, couched in modern terms for the sake of western readers. The author writes as an adherent of the Hinayana school of Buddhism whose aim is to give a presentation of that faith to non-Buddhists. It has the advantage of a work written by one who sees the religion from within, and participates in its way of life. He is able to express himself with clarity and some force, and does not leave us in doubt as to his meaning. As a clear exposition of the faith of a western Buddhist, the book has whatever value it possesses.

The student of the history of religions will find little if anything as a contribution to his field. The book has many statements that the historian would want to challenge, and still others that the psychologist would dispute. In most cases these statements possess the dangerous characteristic of being half truths. 'There is but one dogma in Buddhism and that is that it has no dogma.' Not exactly in the Christian sense, and yet devotion to the *dhamma* or doctrine is one of its supreme demands. Again the author denies the Brahmanic origin of Buddhism. The fact of Jainism with its similarities is evidence that Buddha's religion was not strictly unique. Buddha's debt to the Sāmkhya school is also well known, as also his use of the Upanishads. Mr. Power, tells us that the oriental mind is less matter of fact, less credulous, and more logical and subtle than the western. This is one of those generalizations that is vapid and incapable of demonstration. Incidentally it looks as though the author were congratulating himself at the expense of his compatriots. These are two or three samples of a type of inaccuracy that is characteristic of the book, and unhappily robs it of reliability.

Students' Section

I. H. S.

Oh Saviour of men! Holy Nazarene,
Who swerved the earth from what it was afore,
Whose song of peace, and all too mystic lore,
Was the highest communion, I ween.
Though far estranged in faith, I still revere
A simple man that led a saintly life,
Who, fighting every evil that was rife,
Advanced his Father's holy kingdom here.
The words of God were his, his cult, supreme;
The scribes, he dared, on their own written laws;
He made history on a wooden cross!
His name worked wonders, men did never dream.
Thrice blessed be the place of Bethlehem,
That bore a child, so dear to human cause!

N.S.
5—I

College Notes

RAJABHUSHANA MR. K. CHANDY, whose photograph we publish elsewhere, is the first Member of the Council of Mysore. He belongs to an ancient Christian family in Travancore and after a brilliant academic career he graduated from this College in 1893. In 1894 he sat for the Mysore Civil Service examination and headed the list of successful candidates. The government of the Mysore recognized from the beginning that Mr. Chandy was an officer of brilliant parts and gave him training practically in all the departments of the State. He served as Assistant to the Inspector-General of Police, Assistant Census Superintendent, Senior Assistant Commissioner, Deputy Commissioner and District Magistrate, and Registrar of Co-operative Societies. He was appointed as Excise Commissioner and Inspector General of Registration in November 1917 and in July 1923 he was confirmed as Revenue Commissioner. In 1925 Mr. Chandy was elevated to the high office of the Councillorship in the State and he now occupies the position of First Councillor. Mr. Chandy held all these offices with distinction and he brought to bear a generous outlook in the discharge of his duties. Mr. Chandy is undoubtedly one of the important State officials who has contributed not a little to the great esteem and reputation which the government of Mysore deservedly enjoys throughout India. His work in connection with famine relief and Malnad improvement will always be gratefully remembered by the people of Mysore. The Record of Rights regulation was passed at his instance, and as Chairman of Inam Commission it was left to Mr. Chandy to investigate and settle the several questions that had arisen in regard to the relationship between inamdars and tenants. In all his administrative duties and difficulties the support he received from his Sovereign, His Highness the Maharaja of Mysore, encouraged him to go forward and to give of his best in the service of the people. During the Dasara celebration last year His Highness the Maharaja graciously conferred on him the title of Rajasabhabhushana in appreciation of his valuable services to the State. Mr. Chandy is shortly retiring from the State after nearly thirty-five years of service, and Mysore will lose in him a statesman who deserves to rank with the greatest statesmen South India has produced.

Mr. K. Chandy

WE ARE GREATLY PLEASED TO HEAR OF THE APPOINTMENT OF Dewan Bahadur M. Krishnan Nair as Law Member with the Government of Madras. Mr. Krishnan Nair is the third old boy of the College in the Madras Cabinet as at present constituted. He graduated from this College in 1889 and was enrolled as a High Court Vakil in 1894. He set up practice at Calicut and soon became prominently associated with the social, political and economic activities of his district. As early as 1903 he

Law Member

was returned to the local Legislative Council and continued to represent the Western groups of districts in the Council till 1910 when he was appointed as the Chief Justice in the Travancore High Court. On the retirement of Sir P. Rajagopalachari from the Dewanship of Travancore in 1914, Mr. Krishnan Nair succeeded him and was the head of the administration till 1920 during a period of extraordinary difficulties caused by the great war. His stewardship of the Travancore State was marked by ability and sympathy and he paved the way for the solution of some of the difficult problems that confronted his administration specially in the Revenue department. After he retired from the Dewanship of Travancore he re-entered public life and was returned to the local Legislative Council by the Malabar constituency. Mr. Krishnan Nair has always been noted for his wide outlook and sobriety In the local council he chiefly interested himself in the question of Malabar tenancy. He is greatly attached to this institution and presided over the College Day celebration in 1914. Our congratulations to Dewan Bahadur M. Krishnan Nair.

Tennis Club

THE ANNUAL REPORT OF THE TENNIS CLUB FOR THE YEAR 1927–28 expressed gratitude to the Senatus for the various improvements carried out in the equipment of the Tennis Courts which were also relaid. There was a great rush for membership at the beginning of the term and Mr. C. S. Natarajan was elected Secretary of the Club. Challenge matches were encouraged so as to give scope to members to improve their games. Thirty challenge matches were played during the year.

The annual handicap singles and doubles tournament began on the 6th February. There were sixteen entries for the singles and there were eight entries for the doubles. The finals for singles were played on the 15th February between Mr. P. C. Matthews and Mr. C. S. Natarajan in which the latter won with a score of 7–5 ; 4–6 ; 3–6 ; 6–0 ; 6–2. The doubles finals were played on the 22nd and Mr. S R. Ramakrishnan and partner won with a score of 7–5 ; 6–2. Mr. C.S. Natarajan and Mr. S. R. Ramakrishnan represented the College in the Inter-Collegiate Tournament and lost against the Pachaiyappas. Among the suggestions the Secretary put forward for the improvement of Tennis courts were an all round wire fencing and erection of a water tap.

At Homes

THE MEMBERS OF THE COLLEGE STAFF GAVE THEIR ANNUAL AT HOME to the members of the College hostels on Friday 2nd March. It was held as usual on the terrace of the College House and was largely attended by members of the hostels. After some time spent in conversation, the gathering sat down to a sumptous repast. It was nearly 9 p.m. when the assembly broke up.

The Malayalee Association also was at home to the Malayalee members of the Staff on Tuesday 6th March.

THE STUDENTS OF THE FOURTH HONOURS CLASS BADE FAREWELL to Dr. B. E. Cornelius, acting Professor of Philosophy on Monday 19th March. The farewell address expressed their gratitude to Dr. Cornelius for his exposition of modern philosophy and for his unassuming, courteous and generous nature. Dr. Cornelius in reply expressed his thanks to them for the generous terms in which they had referred to his work.

Farewell

THE REPORT OF THE COLLEGE COUNCIL FOR 1927 OPENS with an expression of satisfaction at the few changes in the large staff of the College. Two lecturers of the College returned in September from the study leave which had been granted to them. For two years Mr. Manavalaramanujan had devoted himself to biological research in the Imperial College of Science and Mr. Moses for a similar period had pursued research in Physical Science at the University of Liverpool. In recognition of the work which they had carried out each received the degree of Ph.D. Dr. Manavalaramanujan was appointed as professor of Zoology in the Presidency College and Dr. Moses resumed his place in the staff of the College as professor of Physics.

Annual Report

After recording the sense of loss through the death of Sir George Paddison who for ten years served on the College Council, the report makes the following appreciative reference to the retirement of Mr. T. N. Cunnooswami, Secretary to the Principal:

After thirty-nine years in the service of the College, first as a teacher in the School, and then as Secretary to the Principal, Mr. T. N. Cunnooswami went on leave at the end of the year prior to retirement. Faithful in the discharge of every duty, energetic in every task to which he was called, and capable in the work of administration, he occupied a place in the College which was all his own. The Council recognise with appreciation his many years of cheerful and ungrudging service of the College, and they would express to him their sincere thanks. Mr. Oliver Zacharias succeeded him as Secretary to the Principal.

Attendance was satisfactory notwithstanding the unfavourable condition which prevailed in Madras during July and August.

Regarding the remodelled Intermediate course which had been prescribed by the University the Report makes the following observation:

The outstanding feature of this scheme is that a Second Language has been made compulsory. In effect it means that the mother tongue of the students, its grammar and its literature, receives an emphasis which has been wanting for the past twenty years. When this course was adopted by the University the College determined that the teaching of the Second Languages should be done only by those whose qualifications would inspire confidence. Instruction in the South Indian Languages was entrusted to Graduates, and the step has been amply justified by the results. Vernacular studies receive an attention similar to that accorded to other subjects of the course. The benefit accruing from this is clearly great.

Another change which occurred in connexion with the Intermediate course was the introduction of the study of Geography in the First Class. To effect this Mr.

Watkins, who has special qualifications for teaching this branch of study, was appointed Professor of Geography. The number of those admitted was limited in order that as much attention as was possible might be given to each student.

An addition was made to the number of subjects offered in the Honours courses. The Physics department found it in their power to give a complete course of theoretical and practical instruction in the higher branches of the subject, provided that only graduates were admitted to it and that their number was restricted. So a Post-Graduate class was formed in July and was at once taken full advantage of.

Dr. Asirvatham continued to conduct the Medical examination of all the students of the College and all the pupils of the School. In addition to this he was Medical Officer of College Park Hostel. Dr. Sanjiva Rao was placed in charge of the George Town hostels as their Medical Officer for the period of the academic year.

Regarding College finance the Report makes the following statement:

The income for the year amounted to Rs 2,61,666-6-0. Fees amounted to Rs 1,52,403-15-0, Government Grants to Rs 46,204-0-0. Home Contributions to Rs 57,011-11-9, the balance Rs 6,046-11-3 being derived from rents and miscellaneous sources. The expenditure incurred in maintaining the School and College during the same period amounted to Rs. 2,73,974-13-8, to which must be added a deficit of Rs 8,717-11-11 on the maintenance of the libraries, making a total of Rs 2,82,692-9-7. The debit balance was thus Rs 21,026-3-7. Towards the liquidation of this debit the sum of Rs 2,820 derived from a legacy available for general expenses, was utilised; and transfers were made of a reserve of Rs 1,527-5-5 in the Special Fees Account and of a further sum of Rs 13,661-7-8 from the Association General Account, thus reducing the debit balance to Rs 3,016-12-6. The large deficit of over Rs 21,000 is not as serious as at first appears, for it was not incurred entirely on the year's working, the expenditure including payments upon the indents of the previous year for Science Apparatus and Library books. Government Grant on these items for both 1926 and 1927 is expected, amounting to approximately Rs 10,000; which may be set off against the debit balance of Rs 21,026-3-7, reducing it to approximately Rs 11,000.

This figure represents the annually recurring deficit on the working of the College while it maintains its present standard of efficiency and range of study. The Council express their thanks to Government for the aid which the College has received. At the same time they would point out that the deficit with which the year closed would not have existed had the College been given from public funds even that amount of aid which might have been granted, in accordance with the principles of the Code, to a Secondary School. Some years ago the Council sought to improve the financial position of the College by enhancing the rates of fees. The fees now charged in School and College are not only higher than the minimum standard rate, but higher than those levied in a Government Institution where the entire nett cost is met from public funds. The excess of fees actually collected over fees reckoned at standard rates amount to over Rs 20,000.

But this very considerab'e effort to attain financial stability has been largely negatived by the action of the Department. While the College has borne the whole strain involved in levying fees at higher rates than similar Institutions in the neighbourhood it has reaped only half the benefit; for it appears that the grant payable is reduced by half the excess of actual fee income reckoned at standard rates. While the Council might legitimately appeal to Government for generous financial treatment in recognition of the work which the College is doing for South India they content themselves with laying stress on the fact that, in all fairness, the College is entitled to receive all that the Grant-in-Aid Code makes provision for. They consider that the present manner of dealing with the College is calculated to hinder the very ends for which the Ministry of Education exists.

In spite of financial difficulties the Council has continued to assist students belonging to the Depressed and Backward classes by a partial remission of fees according to the Government's Educational Rule relative to these classes. The amount conceded in this manner exceeded Rs 4,000. The Council are glad to be able to assist in the education of the Depressed and Backward classes, and they desire to continue to do so. It would be a matter for deep regret if on account of financial difficulties they were compelled to revise this position. It should further be noted that it has been found extremely difficult, under the provisions of the present scheme, to ensure that applicants are excluded who though they belong to the classes specified by the Government are not really eligible; and it is certain that among the classes not scheduled by Government there are many deserving cases which remain unassisted. It is advisable that this concession should be made available for any student who is poor but able, whatever his caste or community may be. It is also desirable that the scheme should be so modified as to secure prompt reimbursement from public funds of the amount of fees thus forgone. At present the College may claim that this sum of over Rs 4,000 is its own contribution to the Depressed and Backward classes as until the College receives its full grant under the Grant-in-Aid Code, it cannot be said to have received any reimbursement from public funds.

The Council would again as in past years express its gratitude to the Governing Board for the support of the Home Churches. Their unwavering loyalty and generous sacrifice are felt as a stimulating and consecrating influence by all associated with the work of the College in this country. The Council hesitate to call upon the Governing Board for additional support from the Home Churches as they realize the magnitude of the sacrifice represented by the present contribution. The responsibility to remove the annually recurring deficit of Rs 10,000 undoubtedly rests primarily with the Government The addition of two new contributing bodies, however, would meet the financial situation and also bring added strength to the cause for which this College stands.

Gifts to the Cooper Fund were received from U. F. C. Sunday School, Longforgan, £ 1, from Mr. J. R. M. Wedderburn, £ 30, from Mr. J. G. Tait, Rs 150, and from Mr. Alladi Krishnaswami and Dr. E. M. Macphail, Rs 100 each. Rao Bahadur K. Balarama Iyer made a gift of Rs 500 as an addition to the capital

of the Ramiah Prize so as to provide for the award of a medal in addition to the books.

Regarding the transfer of the Malabar Christian College to the Basel Mission, the Report says :

On the 10th April the management of the Malabar Christian College after a period of nine years was with the approval of Government re-transferred to the Basel Mission, and the Rev. F. N. Askwith proceeded on furlough preparatory to retirement. The Council desire to thank Mr. Askwith for the service he rendered for six years as Principal. Mr. Askwith brought to his task long experience of educational work in South India and notable administrative capacity. The high hopes entertained at the time when he accepted the appointment have been fully justified. The period had its difficulties and anxieties, but under Mr. Askwith's leadership the College was maintained in steady and effective working. It is a satisfaction to the Council that they have been able to discharge this trust committed to them in a time of war, and that they have now handed back to its former Managers a College ready to enter on a period of still greater usefulness and influence.

Owing largely to the inability of the Commonwealth Trust to contribute to the funds of the College the amounts formerly given by the Basel Mission Industrials, the Council's financial resources were never sufficient for the maintenance of the College. A debit balance of Rs 25,385-9-10 has accumulated on this account The attention of the Basel Mission and of the Commonwealth Trust has been called to this situation and it is hoped that a considerable portion, at any rate, of this deficit may ultimately be wiped out by contributions from those sources.

The services in College Church on Sunday evenings during the College terms were maintained throughout the year and were well attended.

College hostels continued to flourish during the year and the report makes the following interesting observation on hostel life :

Vigorous life marked the hostels during the year. This was seen in their debating societies, their athletic achievements, their University results, and their happy social gatherings. The messing arrangements mentioned in the last Report were continued, and worked beneficially. Opinion is steadily growing in favour of the removal of communal restrictions. The annual dinner given by the Professors and Lecturers to the hostel members, at which the inmates of all the hostels sat down to a common meal, was greatly enjoyed. The Georgetown hostels had practically their full complement of members ; but the withdrawal by the Tramway Corporation of the facilities which were such a boon to the residents in College Park Hostel led to a considerable diminution in the number of those who elected to stay in that hostel. Noticeably good health prevailed in the hostels, and contrasted with the sickness around them. This may be largely attributed to the modern sanitary arrangements which were introducted into the hostels. A sum of almost Rs 3,000 was spent on this installation, and was money well spent. About a quarter of the students of the College live in residential quarters which it maintains and controls. With the departure of Dr. Hogg on furlough Mr. Theodore became Superintendent of the Second Students' Home, and Mr. Bingle Superintendent of

the First Students' Home. When Dr. Moses returned he was appointed Warden of College Park Hostel, and thus Dr. Meston ceased to be its Superintendent and Mr. Asirvadam its Manager.

The financial position of the College Magazine is not satisfactory and an effort will shortly be made to secure new subscribers.

The work of College Societies was neither so deep nor so continued as it ought to be. In the athletic life of the College there was real vigour throughout the year. The University Training Corps continued to fulfil a useful function and there was the usual keen competition for admission.

After reviewing briefly the work of the High School the Report concludes as follows:

A record of what the College has done during the past year, even if it be no more than the meagre outline presented in the foregoing pages, emphasizes several important considerations. A few of these may be mentioned in closing. The first is that the College holds a place, in the esteem of those who desire the higher education of their sons within this Presidency, which affords ground for deep thankfulness. No one who deals with the hundreds who apply for admission, or who listens to what is said by parents bringing their boys from far distant parts to enter the College, or who enjoys a quiet conversation with some former student now occupying a place of responsibility, can fail to be impressed by the affectionate regard in which the College is held by those who in all walks of life do a good day's work. The presence of such a feeling imposes on the staff a heavy responsibility. To the Council it is matter for much satisfaction that this responsibility is fully and happily borne by a staff whose work is characterized by capacity, devotion, sympathy, and unity. They see in this the assurance of a stable service to the sons of India which will remain undisturbed by political and economic ebb and flow.

A second consideration is the general recognition of the definite contribution which the College is making to the education of the youth of this Presidency. The College had its origin in the west, but it is felt to be no alien growth in the east. It attracts to its staff chosen representatives of this land, but gives them as their colleagues a number of men drawn from the Universities of England and America. It is planted where two faiths are the acknowledged guides of millions of the population, but it includes as an integral part of its curriculum a study of that divine revelation which finds its culmination in the life and work of Jesus Christ. It links knowledge with religion, and the systematic training of the mind with the nurture of the soul. Thus it is felt to satisfy two needs which at the present time are being constantly emphasized. On the one hand it gives a training which escapes the condemnation of being merely secular, and which makes its appeal to, while it endeavours to provide satisfaction for, every part of man's complex nature. And on the other hand it gives a training which escapes the condemnation of having no practical result, since, by its bearing on the whole personality it fits men for life, enabling them to face responsibility, to be not slothful in business, and to approve the things that are excellent.

And the third consideration is that, while much has been achieved by the

College, fresh doors of opportunity now stand open to it through which it is called to enter on a fuller heritage. If it is to meet adequately the conditions of the present time the College has much still to do to further the instruction and the life of its students. There are subjects which it is fitting that it should soon include in its curriculum, and there is an amount of individual attention which it ought to bestow, and which it cannot give until it possesses a distinctly strengthened staff. There is a closer life between teacher and taught, in fullest harmony with the educational ideals of this land, which only a more complete residential system will effect. And there is a sense of life's values and worth which can be fostered only in surroundings where body and soul receive appropriate setting and exercise. For ends such as these, possible only in a site removed from that at present occupied, the College has now to strive. And while the Council recognize that only through much faith, labour, and patience, will these ends be reached, they do not feel that in reaching forward to them they are essaying the impossible. For through ninety years has the College been guided on its way, in a manner which calls forth the deepest gratitude, and the care which has watched over and directed it in the days that are past inspires the conviction that He that hath begun a good work will perfect it until the day of Jesus Christ.

The Brotherhood Holiday Camp

DURING THE MONTH OF MAY A HOLIDAY CAMP FOR STUDENTS of the college was held near Ketti on the Nilgiri Hills. This is the first time that anything of this kind has been attempted since the days of Dr. Miller's *Mountain Home at Yercaud*. It was made possib'e this year by the kindness of the F. E Rev. Hill of the Wesleyan Mission who gave the use of a building which was made the nucleus of the camp and who also permitted the use of some of the rooms of the school, the one building having been found to provide insufficient sleeping-room for all. Besides present students of the college a number of the staff and several old students and old members of the staff took part, and some of these found accommodation in a neighbouring cottage. For the greater part of the time a tent was also pitched near the main building. The total number of members was twenty-six of whom six belonged to the staff. Mr. Manikkam and his family, who lived at a short distance, took part in many of the activities of the camp, and several students of the college who were staying on the hills paid occasional visits.

The camp was on the site of the old Boer camp beside the large Government eucalyptus plantation. It was about a mile from Ketti village and station and a little further from the Ghat Road. The Ketti Valley is very extensive and is at an elevation of about 6,500 feet above sea-level. Much of it is under Badaga cultivation but there are numerous eucalyptus sholas and many scrub-covered hills and green marshy valleys. To the north, the steep rocky ridge containing Tiger Hill and Doddabetta dominates the landscape.

The weather during May was hot and dry except for a few welcome thunderstorms in the evenings, and even at night the temperature was not found to be so low as some had expected. Excursions were made to most of the places of interest and beauty in the district; some of these excursions took the whole day and involved

walks of fifteen or sixteen miles with much up and down-hill. The following were the chief excursions : Tiger Hill caves, the summits of Doddabetta and Snowdon, Karteri Falls and Power House, Lovedale Sholas, Lamb's Rock, Coonoor, the Ootacamund Flower Show, the Royal Institute of Animal Husbandry, Wellington, the Pasteur Institute, Coonoor, the Botanical Gardens at Ootacamund and Coonoor, Kullakumbi Tea and Coffee Estate. Besides these longer excursions numerous local walks were taken and frequent visits werep aid to Ootacamund, especially on shandy days. A volley-ball court was fitted up near the camp and many exciting games were played. Through the kindness of the headmaster of the St. George's Homes we had the use of their open-air swimming bath which was frequently visited on hot afternoons. A number of students of botany under Mr. Sabhesan derived great pleasure and profit by collecting and studying specimens of the local flora which differs greatly from that of the plains. All meals were taken together in the main building but owing to the sleeping-places being scattered between several buildings, the social life in the evenings was somewhat broken up, and usually the camp divided into groups who played chess, read or discussed in each others rooms. During the last few days various local friends were entertained and after the camp closed several members spent a few days at Kotagiri and some others went to other parts of the hills.

The health of the camp was excellent throughout. It was generally felt that the camp had been very well worth while, and that even where it had not fully come up to expectations valuable experience had been gained for guidance on future occasions. It is necessary specially to thank Mr. Y. V. Narayanayya who at great personal sacrifice ran the commissariat very efficiently and Mr. and Mrs. Manikkam who took great trouble in arranging for transport of samans from and to Madras and in many other ways helped to make the camp possible and comfortable.

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